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REPORT
ON
LOCATION AND UTILISATION
OF
WASTELANDS IN INDIA

PART II— WEST BENGAL

WASTELANDS SURVEY AND RECLAMATION COMMITTEE
(MINISTRY OF FOOD AND AGRICULTURE)

SEPTEMBER, 1960

PREFACE

The report deals with the availability and location of wastelands in large-sized blocks in the State of West Bengal and the measures to be taken for their reclamation.

2. With a view to gaining some knowledge of the wastelands found in the State, we undertook a tour of the Midnapore district on the 6th and 7th March, 1960, and visited the Garbeta and Kaleghai areas where some reclamation and resettlement schemes undertaken by the State Government were in progress. We had discussions with the Liaison Officer of the State on the 8th March and later on the 4th April, 1960, regarding the availability of wastelands in the State and the problems connected with their reclamation and disposal. On the 17th September, 1960, the draft report of the Committee was discussed and finalised.

3. We wish to thank Shri B. N. Banerjee, Superintending Engineer and Joint Director of Agriculture (Engineering), Government of West Bengal, who, in his capacity as Liaison Officer, furnished the necessary data required by the Committee. Our thanks are also due to Shri K. S. Banerjee, Special Officer (Rehabilitation), Garbeta Rehabilitation Scheme, Government of West Bengal, for the valuable assistance rendered by him in connection with the Committee's work.

4. We are highly indebted to Dr. S. P. Raychaudhari, Chief Soil Survey Officer, Indian Agricultural Research Institute, for furnishing the data on the soils of the State, and for allowing us to make use of the facilities at the cartographic laboratory of the Institute in printing the maps included in the Report.

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INTRODUCTION

Appointment of the Committee and the terms of reference

The uncultivated lands in the country may be broadly classified into the following two categories:—

(*a*) Lands which are really adjuncts of village *abadis* and are meant to serve as pastures and fuel forests or sites for the extension of *abadis*, and

(*b*) Lands in large-sized blocks which have either gone out of cultivation or have never been brought under cultivation.

2. With a view to utilising the latter category of lands which afford the greatest promise for increased agricultural production, the Government of India constituted a Committee, *vide* their letter No. F/1024/Spl/59, dated the 11th June, 1959, (Appendix A) with the following terms of reference:—

(*i*) to make a survey of land classified as "other uncultivated land excluding fallow lands" and "fallow lands other than current fallows" and locate areas where large blocks of land are available for reclamation and resettlement,

(*ii*) to suggest suitable measures for reclamation according to conditions in different areas and estimate the cost of reclamation and colonisation and the financial assistance and agricultural extension and training necessary for the settlers (the settlements being made on a co-operative basis),

(*iii*) to suggest the terms and conditions upon which settlement should be made, the areas to be allotted and the payments to be made by settlers' co-operative, and

(*iv*) to estimate the economic aspects of such reclamation in terms of the expenditure involved, the likely addition to food production and the employment and income that would become available to settlers and their families and to lay down the priorities *inter se* between different categories of reclamable lands.

3. In order to ensure effective co-ordination and speedy completion of the work, each State Government/Union Territory was asked by the Government of India to appoint a fairly senior officer who would be able to devote sufficient time to the work of the Committee, help it in collecting necessary information, and carry on correspondence with it. This procedure facilitated the work of the Committee to a great extent in obtaining relevant data from the State Governments and in arranging the tours.

Programme of Work

4. The Committee held its first meeting on the 7th July, 1959, when it discussed the plan of work and the staff requirements. In the second meeting held on the 4th August, 1959, a draft questionnaire was discussed and finalised. The questionnaire (Appendix B) was issued to all the State Governments and Union Territories, with a request that their replies

should be forwarded to the Committee by the 25th September, 1959. This questionnaire sought information mainly on the availability of wastelands in blocks of 1,000 acres or more and the prospects of resettlement in each State. Subsequently, as a result of the Committee's discussions with the Liaison Officers of the Punjab and Madhya Pradesh, it was felt that the availability of wastelands in blocks of 1,000 acres or more might be limited and it was decided to obtain detailed information in respect of all blocks of wastelands measuring 250 acres or more. Accordingly, a letter was issued to all the State Governments (Appendix C) asking for this information.

5. It was laid down in the terms of reference that the Committee should complete its work and submit its proposals in respect of one State in about a month and then proceed to take up investigation in another State. The Committee, however, felt that such a procedure was neither feasible nor advisable as the different State Governments did not have the information required by the Committee readily available and the process of collection took some time. In some cases, special surveys had to be organised. The Committee, therefore, decided that it might take up investigations in respect of the following eight States together in the first phase, *viz.*, Punjab, Madhya Pradesh, Bihar, Kerala, West Bengal, Orissa, Andhra Pradesh and Mysore, and then take up the remaining States. But for this procedure, the work of the Committee would have been very much delayed.

6. After the reports in respect of the different States have been submitted, a general report covering the entire country will be presented which, *inter alia,* will deal with priorities between the different categories of reclaimable lands in the different States.

7. The report for each State will be divided into four sections. Section A will contain general observations about the State regarding its climate, soils, crops grown, irrigation facilities available, etc. Section B will deal with the areas offered for reclamation, their general characteristics, measures necessary for bringing the wastelands under cultivation, and the cost of reclamation. Section C will contain suggestions for follow-on cultivation and resettlement operations, if any, the estimated additional production from the reclaimed areas, and priorities between the different categories of reclaimable lands. In Section D, a summary of general conclusions and recommendations will be presented.

Problem

8. The main object of the Committee was to make a survey of lands classified as "other uncultivated lands excluding fallow lands" and "fallow lands other than current fallows", and locate large blocks for reclamation and resettlement.

9. In order to avoid ambiguity in the appraisal of the lands available in each of the above two categories, it is necessary to define the two terms. The classification of land-use adopted by the Directorate of Economics and Statistics, Union Ministry of Food and Agriculture, is nine-fold as under:—

(*i*) forests,
(*ii*) barren and unculturable lands,
(*iii*) land put to non-agricultural uses,
(*iv*) permanent pastures and meadows,

(*v*) areas under miscellaneous trees and crops,
(*vi*) culturable waste,
(*vii*) current fallows,
(*viii*) fallows other than current fallows, and
(*ix*) net area sown.

The lands classified under categories (*iv*), (*v*) and (*vi*) are grouped together and designated as "other uncultivated lands excluding fallow lands". The category "culturable waste" is defined to include all lands available for cultivation but not taken up for cultivation or abandoned after a few years for one reason or the other. Such lands may be fallow for more than five years and may be covered with shrubs and jungle. They may be assessed or unassessed and may lie in isolated patches or blocks or within cultivated holdings. Lands reserved as pastures for grazing are not included under "culturable waste". Similarly, fallows of one year are classified as "current fallows", while those of 2-5 years are classified as "fallows other than current fallows". Lands left for growth of miscellaneous trees like bamboo, casuarina, fuel trees, etc. are not classified as "culturable waste".

10. Although the classification suggested by the Ministry of Food and Agriculture has been adopted in all the States, the Committee was informed during the course of discussions with the State officials that the concept of "other uncultivated lands excluding fallow lands" was not yet clearly understood. Lands which were classified as "culturable waste" at the time of settlement some years ago still continue to be shown as such in the revenue records even though they cannot be made culturable after incurring any reasonable expenditure. Similarly, some of the lands which are culturable continue to be classified as barren and unculturable or pasture lands. In some other cases, the pasture lands have been included in the category of culturable waste. Further, the category "other uncultivated lands excluding fallows" is treated as a sort of residual class in which are included all lands not accounted for in any other class.

11. In view of these considerations, we are of the view that the areas included in the two categories, *viz.*, "other uncultivated lands excluding fallow lands" and "fallow lands other than current fallows" may not fairly represent the actual extent of culturable wastelands in the country, and accordingly much reliance cannot be placed on the statistics supplied by the different State Governments. The mere collection of statistics under the head "culturable waste" can serve but little purpose unless detailed information on the types of wasteland available in each State, the ownership of such lands, their availability in sizeable blocks and the cost of reclamation measures is available. We were glad to note that some of the States had realised the importance of collecting such statistics, and had either started the necessary surveys or were preparing to do so for achieving the above object. This is a step in the right direction and any assistance that the Central Government can give in this matter will greatly facilitate the collection of vital statistics on proper land use. For the purpose of our report, we have relied on the data furnished to us by the revenue/agricultural agency of each State.

12. As regards resettlement, the terms of reference of the Committee enjoin upon it to locate areas where large blocks of land are available for reclamation and resettlement. We consider that the resettlement work is

not the be-all and the end-all of our labours and that the main job is to locate lands which can be reclaimed and brought under the plough for increasing the food resources of the country. We have, therefore, suggested resettlement schemes only in cases where food production would be hindered without resettlement work.

13. We have viewed the entire problem mainly from an agricultural angle, but at the same time, we have tried to deal with matters which go beyond the purely agricultural aspects of the subject, for we do recognise that the problem of utilisation of wastelands involves not merely the adoption of agricultural techniques but an appreciation of a variety of human and social aspects.

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SECTION A

(General aspects)

General aspects

The State of West Bengal consists of 15 districts excluding Calcutta, namely, 24-Parganas, Nadia, Murshidabad, Burdwan, Birbhum, Bankura, Midnapore, Hooghly, Howrah, Jalpaiguri, Darjeeling, Malda, West Dinajpur, Purulia and Cooch Behar. The total geographical area of the State is about 34,000 sq. miles.

2. The population of West Bengal, according to the 1951 census, is 2.4 crores which gives an average density of about 769 persons per sq. mile, as compared to 287 for the country as a whole. It is the second most populous State in the country. Of the total population, 57 per cent of it is engaged in agricultural pursuits.

3. According to its topography, West Bengal can be broadly divided into five regions as follows:—

(*i*) Mountainous (Himalayan) region	Comprising parts of the Darjeeling district.
(*ii*) Foot-hills or *terai* (doars) region	Part of Darjeeling, Jalpaiguri and Cooch Behar-districts.
(*iii*) Gangetic plain	West Dinajpur, part of Purulia, Malda, Murshidabad, Nadia, Howrah, Hooghly, and part of Burdwan, Birbhum Bankura, Midnapore and 24-Parganas.
(*iv*) Red and lateritic soils region contiguous with Chotanagpur.	Part of Bankura, Birbhum, Burdwan, Midnapore and Purulia.
(*v*) Coastal region:	
(*a*) Saline and swampy areas and areas reclaimed along the sea-board. ..	Southern part of 24 Parganas.
(*b*) Sand dunes and flats	Southern part of Midnapore.

Climate

4. Due to its peculiar geographical position and varied topography, West Bengal has a wide range of climate from extreme cold in the northern hills of the Darjeeling district to the tropical heat of the plains. The annual rainfall in the plains varies from 50 to 75 inches, while in the hilly areas and in the foot-hills of the Himalayas, it is as high as 110-190 inches. The rainfall is not well distributed as most of it is received during the months of June to mid-October.

Soils

5. The soils of West Bengal can be classified into laterite, red soils, alluviums, coastal soils and *terai* soils (*vide* Map I). A brief description of these soils is given below:—

5.1. Laterite and lateritic soils occur in the districts of Birbhum, Burdwan Bankura and Midnapore. These soils are highly eroded and the topography is undulating. They are deficient in organic matter and in plant nutrients. They have also low calcium content, and are, therefore, acidic in reaction. These soils are generally responsive to nitrogen and phosphate manuring.

5.2. Red soils are found in the districts of Birbhum, Burdwan, Bankura, West Dinajpur and Midnapore. These soils vary in depth, and occur with and without occasional lime concretions in the profile, the landscape giving a chessboard appearance of red soils, lateritic soils and laterites. They are deficient in nitrogen and available phosphate and also in calcium. They are mildly acidic in reaction. These soils are porous and, if the monsoon rains fail, the crops growing in them suffer from lack of moisture.

5.3. The alluvial soils of the State belong to two families, *viz.*, the Ganga alluvium and Vindhya alluvium. The soils of the Ganga alluvium are found in the districts of Murshidabad, Nadia, 24-Parganas Burdwan, Hooghly, and a portion of Midnapore. They are generally deficient in nitrogen, and respond to the application of nitrogenous fertilisers The Ganga flat lands have a more mature profile and vary from clays to sands, depending upon the local topography. These soils are eminently suited to the cultivation of *aman* paddy, and in the depressions, *boro* paddy is grown.

5.3.1. The Vindhya alluvial soils are formed from the alluviums brought down from the Rajmahal Hills and the Chotanagpur plateau. These comprise Rajmahal, Damodar and Kosi riverine soils, flat land soils and upland soils. They occur in the districts of Birbhum Burdwan, Hooghly and Midnapore, and respond well to the application of nitrogen in which they are deficient.

5.4. Next in importance among the alluvial soils are the coastal alluviums of tidal origin which occur in the districts of 24-Parganas and Midnapore. These soils are protected from the ingress of sea-water by the bunds or dykes constructed in the coastal area. Sluices are constructed in these bunds so as to allow the escape of rain-water which helps in leaching out the salts from the soil. These soils are rich in plant nutrients and can grow good crops of paddy.

5.5. *Terai* soils occur at the foot-hills of the Himalayas, and are formed by the deposition of the soil materials brought down from the hills by rains. The soils are mostly sandy, and are deep black to grey black in colour. The soils are acidic in reaction and poor in plant nutrients. The cultivation of paddy in these soils is rather precarious because of their poor moisture-holding capacity. The application of nitrogen in the form of oil-cakes and phosphates has been found to increase the yield of the paddy crop when grown in these soils. These soils occur in the majority of the rice-growing areas in the Jalpaiguri and Cooch-Behar districts.

6. The important crops grown in the different soil zones are as below:—

Soil zones	*Crops*
Red and lateritic soils	Paddy, gram, sugarcane, tobacco, jute, potato, pulses and vegetables.
Alluvial soils	Paddy, barley, gram, sugarcane, potato, jute, lentils, khesari, (*Lathyrus sativus*) and vegetables.
***Terai* soils**	Paddy, maize, barley, gram, potato, tea and medicinal plants.

Irrigation

7. The total irrigated area in the State in the year 1956-57 was 28,73,800 acres, out of the total cropped area of 1,40,46.500 acres, representing about 20 per cent of the cropped area. The main source of irrigation in the State is canals, covering an area of 15,15,000 acres, or 50 per cent of the net irrigated area. Tanks account for 24 per cent, wells one per cent, and other sources 18 per cent. The main crop grown under irrigation is rice, which covers 25,15,800 acres out of the total irrigated area of 28,73,800 acres.

8. Of the net irrigated area in the State during 1956-57, the district of Midnapore had the maximum area under irrigation (6.8 lakh acres), followed by Birbhum (4.9 lakh acres), Burdwan (4.3 lakh acres) and Bankura (3.0 lakh acres) in the order of mention. Of the remaining districts, Murshidabad has 2.06 lakh acres under irrigation, Hooghly 1.83 lakh acres, and Jaipaiguri 1.64 lakh acres.

Natural vegetation, crops grown and yields obtained

9. The important weeds found in the different soil zones of West Bengal are as below:—

(i) *Alluvial soils*

Phenix dactlylifera, Borassus flabelliffer, Jatropha gossypifolia, Urema, Helitropium and *Sida* are the chief weeds. *Kans* grows abundantly in the flood plains of the rivers.

(ii) *Red and lateritic soils*

Hedges and waste spaces are covered with *Jatropha gossypifolia, Urena, Sida, dub* grass and spear grass. Babul (*Acacia arabica*) trees and *kans* grass are abundant by the sides of the rivers. Bushy sclerophyllous shrubs, locally known as *atari, beguna,* and sabai grasses are grown near the homesteads.

(iii) *Coastal alluvium and Terai soils*

Typha latifolia (Hogla) or *Typha egustifolia, Nal, Bhabni,* etc.

10. Rice is the staple food crop of the State. Of the total area of 1,20,28,000 acres under food grains, rice occupied 1,00,63,000 acres in 1956-57, *i.e.,* 84 per cent of the total area. Rice is cultivated under a variety of conditions in the State from the saline coastal belt to the mountainous region of the Himalayas up to an altitude of about 4,000 ft. According to the harvest seasons, the paddy crop in the State is classified as *aus* (autumn,) *aman* (winter) and *boro* (summer). Other food crops such as wheat, barley, gram, maize, bajra and jowar account for only 8 per cent of the total area under food-grains. Among the commercial crops, jute and tea are the most important.

11. In 1956-57, the average yield per acre of the *aus* crop was 8.06 maunds, of *aman* 12.26 maunds, and of *boro* 12.11 maunds in terms of clean rice. The total production of rice in the year 1956-57 was about 4.34 million tons. West Bengal is the largest rice producing State in the Indian Union. Jute is an important crop of the State, and contributes 50 per cent to the all-India production, the figure for the year 1956-57 being 13.45 lakh bales. The average yields of important crops grown in the different districts are tabulated in Appendix D.

SECTION B

(Description of blocks and measures for reclamation)

Land utilisation

12. The total area of the State may be classified under five different heads as under:—

	Acres (millions)
(*i*) Forests	2·32
(*ii*) Area not available for cultivation	2·97
(*iii*) Other uncultivated lands excluding current fallows	1·51
(*iv*) Current fallows	1·03
(*v*) Net area sown	12·02
TOTAL ..	19·85

13. It would be observed from the above statement that the classification adopted for reporting the land utilisation statistics of the State is not as elaborate as in most other States where the head "other uncultivated land excluding current fallows" is further split up into three sub-heads, namely, "culturable waste", "miscellaneous tree crops, groves, etc.", and "permanent pastures and other grazing lands."

14. In the case of West Bengal, therefore, the lands classified as "other uncultivated land excluding current fallows" are only to be considered for the purpose of locating large-sized blocks of land for reclamation and resettlement. The district-wise distribution of the area under each of the heads indicated above is given in Appendix E.

15. Of the total area of 1.51 million acres under the head "other uncultivated lands excluding current fallows", about 1.1 lakh acres have been located in the State for reclamation in blocks of 250 acres or more, in the districts of Midnapore, Purulia, Bankura and Jalpaiguri. While the data in repect of Midnapore, Bankura and Jalpaiguri are based on the district-wise surveys of wastelands conducted by the State Directorate of Agriculture with the co-operation of the Director of Land Records and Surveys during the year 1957-58, those for Purulia have been collected by conducting a special rapid survey for the purpose. In the survey carried out by the Directorate of Agriculture, the 24-Parganas and the hilly parts of the Darjeeling district were excluded from the purview.

16. As a result of the survey carried out by the Directorate of Agriculture, about 3 lakh acres of wastelands were located in the State of West Bengal in blocks of 1.25 acres or more as per details given below:—

District	Blocks each of size more than 10 acres		Blocks each below 10 acres (1.25 acres to less than10 acres)		Total blocks (1.25 acres and above)	
	No. of blocks	Area (acres)	No. of blocks	Area (acres)	No. of blocks	Area (acres)
Nadia	29	753	410	1,346	439	2,099
Murshidabad ..	48	1,298	495	1,664	543	2,962
Burdwan	406	12,596	1,271	4,261	1,677	16,857
Birbhum	561	17,168	2,346	7,321	2,907	24,489
Bankura	1,828	62,916	2,901	10,496	4,729	73,412

District	Blocks each of size more than 10 acres		Blocks each below (1.25 acres to less than 10 acres)		Total blocks (1.25 acres and below	
	No. of blocks	Area (areas)	No. of blocks	Area (areas)	No. of blocks	Area (acres)
Midnapore	1,425	58,733	2,741	10,197	4,166	68,930
Hooghly	83	2,387	128	415	211	2,802
Howrah	1	21	5	11	6	32
Jalpaiguri	851	51,143	2,544	9,828	3,395	60,971
Darjeeling	199	5,910	943	3,380	1,142	9,290
Malda	213	11,952	260	1,037	473	12,989
West Dinajpur ..	33	826	286	940	319	1,766
Cooch Behar ..	392	16,996	755	2,888	1,147	19,884
TOTAL ..	6,069	2,42,699	15,085	53,784	21,154	2,96,483

17. From the above table, it would appear that the wastelands form only a small proportion of the total area under the head "other uncultivated lands excluding current fallows", and that this category mainly includes areas which are utilised for growing trees, and as pastures.

18. In this connection, it is relevant to point out that there has been some confusion in the past in regard to the meaning of culturable waste. In the survey carried out by the Directorate of Agriculture, some of the wastelands, such as those found in the districts of Midnapore and Bankura, seem to have been ignored as they were considered unculturable. With the advance in our knowledge of land improvement, there is no doubt that such lands can be brought under cultivation and made fit for producing agricultural crops. In our opinion, therefore, the total area under culturable waste in the State is likely to be more than what has now been located. The actual information on the availability of wastelands can, therefore, be obtained only by conducting a survey as indicated in the introductory chapter.

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Availability of wastelands

19. The wastelands in the State offered for reclamation can broadly be divided into the following four categories :—

I—Eroded lands,
II—*Char* lands,
III—*Terai* lands (flat lands at the foot of the hills), and
IV—Saline lands.

20. The distribution of wastelands under categories I, II, III and IV above in the different districts is given below :—

District	Area available under category (acres)				Total (acres)
	I	II	III	IV	
Midnapore	17,342	—	—	1,798	19,140
Purulia	57,250	—	—	—	57,250
Bankura	10,787	—	—	—	10,787
Jalpaiguri	—	12,594	13,869	—	26,463
TOTAL ..	85,379	12,594	13,869	1,798	1,13,640

21. Map II shows the location of blocks of wastelands in categories I, II, III and IV.

Category I

Details of blocks under different categories

22. The following table gives the names of the different blocks of wastelands found in the districts of Midnapore, Purulia and Bankura :—

District	Name of block (with reference to Police Station)	Block No.	Area (acres)
Midnapore	Keshiary	1	786
	Kharagpur	2	1,263
	Salboni	3	1,784
	Garbeta	4	7,863
	Chandrakona	5	236
	Jhargram	6	1,420
	Sankarail	7	2,808
	Binpur	8	1,232
Purulia	Purulia	9	19,000
	Jaipur	10	9,500
	Jhalda	11	500
	Para	12	7,500
	Hura	13	5,000
	Burabazar	14	1,750
	Kashipur	15	8,000
	Puncha	16	6,000
Bankura	Taldangra	17	1,376
	Simlapal	18	1,145
	Onda	19	6,100
	Vishnupur	20	875
	Sonamukhi	21	1,291

23. A few comments in respect of each block are given below, while fuller details are tabulated in Appendix F.

24. *Block* 1: This block is situated in the Dudhebudhi, Kulbani and Lanspal mouzas of the Keshiary police station. The land is more or less level. The soil is blackish loam with a tendency towards clay. The land is infested with *kans, motha* and *dub* grasses. The area is fairly level and there is consequently need for adequate drainage. The water-table is high, and irrigation facilities can be provided by the construction of wells or tube-wells. The cost of reclamation in this block is estimated at Rs. 50 per acre.

25. *Block* 2: The soil in this block is lateritic, with slopes varying from one to four per cent. Part of the area will have to be contour-bunded, while the rest may be grade-terraced. Exploration for the suitability of the area for deep tube-wells is in progress, and if promising results are obtained, irrigation will be assured. The soil is poor in fertility and is overlain with *murum*. The cost of reclamation will be roughly Rs. 100 per acre.

26. *Block* 3: The soil in this block is of the same type as in block 2. The water-table is very low, and hence the possibilities of providing irrigation are not bright, but a portion of the area in the block is likely to be irrigated by the Kangsabati river project which is expected to be completed by 1962.

27. *Block* 4: The area in this block which is fairly large, can be brought under cultivation by adopting suitable soil conservation measures, namely, contour-bunding, construction of graded terraces, etc. The soil is lateritic and poor in nitrogen, phosphate and organic matter. Some of the areas adjoining the block have already been taken up for reclamation under the Garbeta Rehabilitation Scheme, where 800 refugee families are to be settled by 1961-62. Part of the area in the block will be irrigated by the Kangsabati river project.

28. *Block* 5 is similar to block 4 as regards the type of soil, slope of land, etc. The sub-soil water is available at a depth of 20–25 feet below the ground-level and can be tapped for irrigation by the construction of wells.

29. *Blocks* 6, 7 and 8: The blocks located in the jurisdiction of the Jhargram and Sankaril police stations are more or less continuous. The type of soil found in these blocks is similar to that found in blocks 3, 4 and 5. The sub-soil water is available at a depth of about 30 feet in the Sankaril block, but the water-table is very low in the Jhargram and Binpur blocks.

30. In the blocks referred to in paras 26 to 29, the problems of reclamation are mainly contour-bunding, construction of laterals and waste-weirs, tractor ploughing and disc harrowing. The cost of these measures will be as under :—

		Per acre (Rs.)
Contour-bunding and construction of laterals and waste-weirs	—	51
Ploughing	—	30
Disc harrowing	—	20
TOTAL ..	—	101

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31. In Salboni and Garbeta and also in some areas in the jurisdiction of the Chandrakona police station, shrubs and stumps of trees are found, and these need to be removed before undertaking soil conservation measures. The total area over which the clearance work will be necessary is about 3,000 acres. It is estimated that the cost of removal of shrubs and jungle will be about Rs. 25 per acre.

32. *Block* 9 is a fairly big area consisting of several blocks in the jurisdiction of the Purulia police station. Here the land is undulating, and the soil is lateritic, with *murum* scattered on the surface and interspersed with quartz veins. It will, therefore, be necessary to remove stones before undertaking deep-ploughing with tractors. Contour-bunding will have to be carried out in the entire area as the slope of the land is more than 3 per cent on an average. Rainfall is about 50″. No irrigation is available, and the construction of wells will be costly as the water-table is low. Only seasonal crops can be grown in the block.

33. *Blocks* 10 and 11 fall in the jurisdiction of jaipur and Jhalda police stations respectively. The soil is stony in texture. Proper contour-bunding would render the lower contours fit for growing agricultural crops, but the upper ones should be reserved for growing cashewnut, sisal and forest trees. Of the 10,000 acres comprising these two blocks, about 4,000 acres may be available for agricultural purposes. The water-table is very low and hence no irrigation facilities are possible in the area.

34. *Block* 12: This block falls in the juridiction of the Pala Police station. The land is very slopy. Strip-cropping may be advocated in the area. Only seasonal crops can be grown as no irrigation is available.

35. *Block* 13: The block actually consists of three different sub-blocks. The first sub-block is a piece of high land of red soil with lateritic concretions. The second sub-block in the Kalaboni and Piuza mouzas is more or less slopy land with good soil-depth. By adopting suitable soil conservation measures, the land can be rendered fit for growing agricultural crops The third sub-block which is situated on the high land is stony and has not got the requisite soil-depth for supporting crop growth. In all these three sub-blocks, irrigation is not available and crops can be grown only during the monsoons.

36. *Blocks* 14 and 15 : The land in these blocks is flat, and the soil is red in colour. The rainfall of the area varies from 45" to 50". The slope is generally about 3 per cent, although at places where gullies have been formed, the slope is naturally more. Here again, only seasonal crops can be grown, there being no possibility of providing irrigation facilities.

37. *Block* 16: The land is rolling, and its slope varies from 2 to 6 per cent. Contour-bunding and terracing are necessary before agricultural crops can be grown in this area. The soil is lateritic, with quartz veins and lateritic concretions. Irrigation facilities are not available.

38. The measures for the reclamation of land in blocks 9 to 16 will be more or less similar to those in blocks located in the Midnapore district, except that at places where the slope of the land is high, terraces will have to be constructed, and in other cases, stones removed wherever they are to be found. The cost of reclamation may be estimated at Rs. 130 per acre.

39. *Blocks* 17 and 18 represent the same type of lateritic soil as is found in the wastelands of the Garbeta police station in the Midnapore district. In the Taldangra police station, the water-table is very low, while it is not so low in Simlapal. The area needs to be contour-bunded as the average slope is nearly 3 per cent. Irrigation facilities by sinking wells or tube-wells can be provided in the Simlapal police station area, but in Taldangra crops can be grown only during the rainy season. The average cost of reclamation will be the same as that in Garbeta. Certain parts of the area may be benefited by the Kangsabati river project.

40. *Block* 19: This block has two distinct types of soil, lateritic and calcium clay. Contour-bunding would be necessary because of the undulating nature of the land. Irrigation may become available in the area from the Kangsabati river project. The average cost of reclamation will not be more than Rs. 100 per acre.

41. *Block* 20: This block has similar problem of reclamation to those of the wastelands in the jurisdiction of the Garbeta police station.

42. *Block* 21 : The soil of this block is alluvium, formed by the deposition of silt from the river Damodar. The land is infested with *kans, sarkanda* and other pernicious weeds. It can be reclaimed by deep-ploughing with the help of tractors. The cost of reclamation will not exceed Rs. 75 per acre. Irrigation facilities can be made available by sinking shallow wells as the water-table is quite high.

43. To sum up, it may be stated that the wastelands found in the districts of Midnapore, Purulia and Bankura falling in category I are mostly undulating, with large upland tracts made up of ridges alternating with valleys. The rainfall ranges from 45" to 55". The soils are generally red and lateritic, varying in texture from sandy loam to loam, but the predominant type is sandy loam with *murum* on the surface. The uplands constitute about 60 per cent and the slopy and low lands 20 per cent each of the entire area. The uplands are more suitable for afforestation, and should be planted to cashewnut and other trees of economic importance. The areas offered for reclamation are practically devoid of trees or shrubs.

44. Land reclamation in these areas is primarily soil and water conservation work, which involves the adoption of the following measures depending upon the slope of the land, type of soil, etc. :—

(a) construction of contour-bunds or graded terraces,
(b) construction of bench terraces,
(c) gully-plugging,
(d) contour terracing,
(e) ploughing, and
(f) disc harrowing.

45. The total cost of reclamation of 85,379 acres in category I is estimated as under :—

District	Block No.	Area (acres)	Cost of reclamation per acre (Rs.)	Total cost of reclamation (Rs.)
Midnapore	1	736	50	36,800
	2-8	16,606	100	16,60,600+ (75,000)*
Purulia	9-16	57,250	130	74,42,500
	17-20	9,496	100	9,49,600
Bankura	21	1,291	75	96,825
TOTAL ..		85,379		1,02,61,325

*Cost of removal of bushes and shrubs in Salboni, Garbeta and certain parts of the Chandrakona police station at the rate of Rs. 25 per acre for an area of 3,000 acres.

The average cost of reclamation would be Rs. 120 per acre.

46. Before we proceed to deal with the next category of wastelands, we wish to make the following suggestions :—

(i) It is necessary to introduce legislation on the lines of the model Act prepared by the Government of India and circulated to the State Governments, empowering the State Government to undertake soil conservation measures in the State. This legislation should contain provision to the effect that in case the soil conservation work is not carried out by the beneficiaries in accordance with the technical plans approved by the Government Department, this may be done by the Government, or on its behalf by the Panchayat Samiti, or by any other agency deputed by the Government, and the cost recovered from the beneficiaries.

(ii) The selected projects on soil conservation should be on a complete watershed basis. The lines on which contour ditches and bunds are to run should be decided in advance, including the alignment of surplus channels (vegetative waterways), masonry structures, etc.

(iii) In an area receiving a rainfall of 45", there is bound to be some stagnation of water above the bunds if they are aligned on a dead contour. Whilst this condition may be quite useful for a crop like paddy, it may prove harmful to the growth of sisal (*Agave sisalina*). This position can be improved either by providing suitable outlets, or by constructing graded bunds leading to a vegetative waterway.

(iv) The following field experiments may be laid out in order to study the variations in cost under different methods of bunding :—

(a) A small area of 25-50 acres in a "self-defended" catchment should be laid out with bunds of 10 sq. ft. section (consolidated) on a falling contour, the surplus water emptying on to a natural or artificial vegetative waterway. The distance between the bunds should not be more than 200 ft. The material for the bund should be excavated from the upstream side so as to form a trapezoidal channel.

(b) Another area of 25-50 acres should be laid out with the above type of bunds, excavation being from borrow pits of rectangular shape. The bunds should be on level with ends open and should discharge onto a vegetative waterway.

(c) A third catchment of 25-50 acres may be taken up. Trenches of 2 ft. in width and 2 ft. in depth may be dug out along the contours, and the excavated material should be used to form a bund on the downstream side. The interval between the trenches should not be more than 100 ft. These trenches should be on level with ends open. The bunds may be planted with sisal at closer spacing.

47. The above three field plots should be kept under observation for a period of three years, and the best of them from the point of view of cost and effectiveness should be adopted in future work.

Category II

48. *Block* 22. In this category, only one block comprising an area of 12,594 acres has been located in the jurisdiction of the Mal police station of the Jalpaiguri district. The area consists of seven more or less contiguous sub-blocks located in 30 mouzas, the names of which are given in Appendix F. The entire terrain is a flood plain formed by the deposition of sediments on the bed of the river Teesta. The topography is more or less flat, and the lands incline uniformly with a low gradient in all directions. There are also elevated locations as well as depressions in this area. The water-table of the land is high, and the entire soil-depth is within the zone of capillary fringe. The soil thus remains moist throughout the year. The lands are heavily infested with pernicious weeds, such as *Holga* (*Typha* sp.), *nal, bhabni, kans, sarkanda,* etc. The top-layers of the soil are rich in nitrogen as well as phosphate and

potassium. The area receives a rainfall of about 140″, most of which occurs in the months of April to September.

49. The main problem of this area is that it is subject to floods. Some flood control schemes are in operation in the area, and as a result of these measures, the hazard from the floods is considerably reduced, except at times when the Teesta is in high floods. The other problem is the soil erosion due to floods in the Teesta river. It has been suggested that a belt of thick growth of grasses, such as *nal, bhabni,* etc., may be established along the river bank to prevent under-cutting and erosion.

50. These *char* lands are very fertile and can grow good crops of paddy, sugarcane, jute, etc. As indicated above, the flood and erosion hazards make large-scale habitation in this area somewhat precarious, although settlements are possible at sites which are not subject to these hazards. The cost of removing shrubs and bushes and ploughing the land to make it fit for growing crops is estimated at between Rs. 75 and Rs. 100 per acre.

Category III

51. In this category of wastelands which consists of flat lands located at the foot of the hills (*terai* lands), six blocks have been located in the district of Jalpaiguri as per details given below :—

Name of Block	Block No.	Area (acres)
Maynaguri	23	2,958
Dhupguri	24	1,194
Jalpaiguri	25	6,532
Nagarkata	26	2,241
Alipurduar	27	568
Falakata	28	376
TOTAL		13,869

Blocks 26 and 27 are covered with shrubs and jungle, while the rest are infested with pernicious grasses, such as *kans, sarkanda, motha,* etc. The soil is black in colour but very poor in nitrogen, phosphate, postassium and organic matter. Even after heavy rains, the soil dries up quickly, leaving no trace of moisture on the surface. The rainfall in the area is quite high, ranging from 120″ to 180″, but is confined to the period April to October. Only seasonal crops can be grown. The cost of reclamation is estimated at Rs. 100 per acre.

Category IV

52. In this category of wastelands, only two blocks (29 & 30) comprising an area of 1,798 acres have been located in the Contai and Ramnagar police stations of the Midnapore district. Salinity in the area is not very high, but the lands are slightly eroded. To reclaim these lands, suitable ameliorative measures for the removal of salinity would be necessary. The soil is heavy clay (sodium clay) and alluvium. It is rich in organic matter and plant nutrients. The rainfall in the area is fairly high, ranging from 70 to 80 inches. Good crops of paddy can be grown. The cost of reclamation is estimated at about Rs. 160 per acre.

SECTION C

(Disposal of reclaimed lands for cultivation)

Nature of ownership of wastelands and their disposal for cultivation

53. In the State of West Bengal, wastelands may be classified into the following :—

(1) Private lands,
(2) Government lands, and
(3) Common lands.

54. Information regarding the actual extent of wastelands according to the nature of ownership in respect of the different categories is not available. We were, however, informed that, of the total area of wastelands located for reclamation, about 60 per cent may belong to the Government, consequent on the acquisition of the zamindari lands, 20 per cent to private individuals, and the rest to the village panchayats.

55. The problems involved in the disposal of wastelands in each category of ownership are discussed below.

55.1. *Private lands*: The wastelands belonging to private individuals can be handed over, after reclamation, to the respective owners for follow-on cultivation. In respect of lands which require the adoption of soil conservation measures, we recommend that 25 per cent of the expenditure on contour-bunding may be treated as subsidy to be shared equally between the Centre and the State, and the balance may be advanced as loan to the cultivators to be recovered in equal annual instalments spread over a period of 10 to 15 years

55.2. *Government lands*: Since the abolition of the zamindari system in West Bengal, large areas of wastelands formerly belonging to the zamindars now vest in the State under the Estates Acquisition Act. These lands may be allotted to landless labourers, members of the Scheduled Castes and the Scheduled Tribes, etc., who own less than two acres. It is further suggested that co-operative colonies of displaced persons from East Pakistan and landless labourers may be set up for bringing these lands under cultivation. A model settlement scheme is given in Appendix G.

55.3. *Common lands*: These lands, after reclamation, may be given back to the village panchayats for arranging follow-on cultivation.

Suggestions for effective utilisation of wastelands

56. We may now make a few suggestions for the effective utilisation of wastelands located in the districts of Midnapore, Purulia, Bankura and Jalpaiguri.

57. A detailed soil survey for land-use should be carried out in each area proposed for reclamation, particularly in the districts of Midnapore, Purulia and Bankura so that the lands are put to proper use. We understand that the State Government has set up the Land Utilisation Board, the main function of which is to conduct soil surveys for classifying lands on the basis of land-use capability. This Board can assist the State

Directorate of Agriculture in carrying out soil surveys of reclaimed areas. If necessary, the State Government may apply for financial assistance to the Central Soil Conservation Board for carrying out these surveys.

58. The execution of soil and water conservation projects on cultivators' holdings should, however, be the responsibility of the State Director of Agriculture. In order to carry out the large programme of soil conservation work indicated in the previous section, we recommend the setting up of a separate wing of soil conservation under the Superintending Engineer and Joint Director of Agriculture (Engineering). We further suggest that the State Government may appoint the senior soil conservation staff immediately, and arrange for their training at the centres organised by the Central Soil Conservation Board. The senior officers, in turn, will train the field staff. At present practically no specialised staff on soil conservation is available in the State for undertaking the programme of work suggested by us.

59. After soil conservation measures have been carried out, the responsibility for the follow-on cultivation should be that of the normal staff of the Agriculture Department, which, if necessary, may be strengthened. The agricultural staff should suggest suitable cropping patterns and also introduce improved agricultural practices in the reclaimed areas. The extension staff of the Community Development Organisation can assist, particularly in the demonstration of improved methods of cultivation and in arranging for the supply of agricultural requisities.

60. Wherever irrigation facilities can be provided by the construction of shallow wells or tubewells, loans and/or subsidy may be given on a liberal scale to the cultivators.

61. The wastelands located in the districts of Midnapore, Bankura and Purulia are extremely poor in fertility. Sludge is now being transported from Calcutta for application to the reclaimed lands. We recommend that the concessions on the transport of sludge for manuring, if any, should be continued. Green manuring should be extensively practised in the reclaimed lands to build up their organic content and improve soil structure. The planting of *Ipomoea carnea, Sesbania speciosa*, etc. should be encouraged as the leaves and twigs of these plants are a useful source of green matter for application to the fields.

52. In the areas of the lateritic or red soil belt where irrigation facilities are not available, percolation tanks or earthen embankments across big gullies may be constructed to hold water. The construction of such tanks helps in the storage of water for agricultural and other purposes, and also checks erosion on the downstream side of the gullies. Such tanks have been constructed in the lateritic belt of Chotanagpur which extends into the districts of Midnapore, Bankura and Purulia, and have proved very useful for storing rain-water for irrigation and for cattle. Special financial provision for the excavation of percolation tanks to irrigate the reclaimed lands wil have to be made in the reclamation programme of the State.

63. In the Teesta *char* lands, there is abundance of sub-soil water and the water-level is also high. Advantage should be taken of the nearness of the sub-soil water from the ground-level to grow winter crops by adopting suitable cultivation practices. The water can also be pumped for irrigating crops grown at higher situations.

64. The *char* lands are fertile and the crop yields during the first two or three years after reclamation are generally very satisfactory even without the application of manures and fertilizers. It is necessary, however, that sound agronomic practices should be developed so that the fertility of these lands is maintained at a high level.

65. The general crop patterns recommended for the lands in the different categories are as under :—

65.1. *Category* 1 : The cropping pattern in the lateritic belt of Midnapore, Bankura and Purulia will vary according to the rainfall and the slope of the land. However, generally speaking, on the ridges, cashewnut may be grown. In the highly eroded lands, the plantation of sisal and *sabai* grass is recommended. In places where there is sufficient depth of the soil, crops like groundnut, kulthi (*Dolichos biflorus*), sweet potato, and millets like bajra and jowar can be cultivated. In the low-lying areas, highland paddy, maize, and groundnut may be grown as these crops have been found to grow well in the Kaleghai area of the Midnapore district.

65.2. In the Purulia district and parts of the Bankura district where the rainfall is less than 55" and where the soil is stony, the uplands may be reserved for afforestation. Crops like millets, kodo (*Eleusine coracana*) and niger may be grown in the slopy lands, and highland paddy, maize and groundnut in more or less level lands. Some of the blocks which are likely to receive irrigation from the Kangsabati project, may be double-cropped with paddy followed by wheat or pulses in the lower areas, while in the uplands sugarcane, maize, and jute can be grown followed by mustard and potatoes.

65.3. *Category* 11 : In the *char* lands of the river Teesta which have been reclaimed, good yields of crops are being obtained. In the areas where the cultivation of two crops can be gradually developed, a system of cropping consisting of jute and *aman* paddy, early *aus* and late *aman* paddy, and *aman* paddy and some suitable pulse or vegetable crop which can be sown in December, may be tried. Since the water-level of these lands is high, crops like sweet potato and other root crops can be grown in the *rabi* season.

65.4. *Category III* : In the flat lands belonging to category III, crops like jute, *aus* paddy and surgarcane may be grown after the addition of adequate quantities of manure. Mustard is generally grown in these areas in the *rabi* season after an interval of two to three years.

65.5. *Category IV* : In the saline lands of the Midnapore district, paddy can be grown as the land is fertile and the rainfall is about 70 inches. Suitable saline-resistant varieties of paddy should be evolved for growing in these lands.

Economic aspect of reclamation

66. We shall now examine the economic aspects of reclamation of the various categories of reclaimable lands in terms of additional production *vis-a-vis* the expenditure involved.

67. In the lateritic belt of the Midnapore and Bankura districts, sisal, *sabai* grass and cashewnut may be grown on a plantation scale in those lands which cannot be reclaimed, and are accordingly not fit for growing

food crops. An average yield of 5 maunds of sisal fibre per acre can be obtained for a period of ten years after the fourth year of planting. Assuming the price of the fibre as Rs. 45 per maund, the value of the fibre would be Rs. 225 per acre. The net return from an acre of sisal plantation would be about Rs. 90, after deducting Rs. 135 as the average annual expenditure on labour, maintenance and depreciation. In the case of *sabai* grass, which grows for five years and yields an annual harvest of 15-18 maunds, the value of the produce from an acre of plantation varies from Rs. 70 to Rs. 80. Similarly, the cultivation of cashewnut which is another crop suitable for growing in the uplands, gives a return of Rs. 300 per acre from the sixth year after planting, at the rate of 5 maunds of cashew kernels per acre.

68. In the lands where paddy can be grown, *aus* paddy is cultivated in high-lying lands, and early *aman* at lower situations. Maize and groundnut can also be grown. The average yield of paddy, maize and groundnut may be taken as 12, 10 and 15 maunds per acre, respectively. On a conservative estimate, the annual additional food production per acre (if other crops are grown, their equivalents in terms of food crops) may be assumed as 10 maunds.

69. In the Purulia district, a large proportion of the area is not fit for growing food crops. These lands are, however, ideally suited for growing sisal, cashewnut, *dhak* (*Butea frondosa*) and *kusum* (*Schleichera trijuga*). The last two trees are the hosts of the lac insect. The production of lac is a remunerative secondary occupation of the cultivators in this district, and a family can earn as much as Rs. 500 per year. In the remaining area which is barely 30 per cent of the total area in the district, highland paddy (*aus*), maize, groundnut, millets and niger can be grown. The average additional production in terms of foodgrains may be estimated at 6-8 maunds per acre.

70. To sum up, the wastelands in category I which cannot be reclaimed for growing food crops, can be put under sisal, cashewnut and the hosts of the lac insect for the production of lac. The net return from an acre of land under non-food crops ranges from Rs. 100 to Rs. 200. In the lands where food crops can be grown, the average yield of paddy is about 12 maunds. On a conservative estimate, the additional food production over the entire area may be assumed as 8 maunds per acre (if other crops are grown, their equivalents in terms of food crops are taken into account).

71. The lands included in category II are very fertile and can produce good crops of paddy, sugarcane, jute, etc. These lands can be double-cropped and, even on a conservative estimate, we may assume additional food production at 30 maunds per acre.

72. As regards the lands in category III, these are poor in fertility because of their low water-holding capacity. At present only seasonal crops can be grown, and their yield is not likely to be more than 6 maunds per acre. With the augmentation of irrigation supply in these areas, crop yields would substantially increase.

73. The saline lands located in the district of Midnapore are capable of yielding 15 maunds of foodgrains after reclamation.

74. To assess the relative economic benefits of reclamation between the different categories of reclaimable lands, the figures of estimated additional food production should be studied in relation to the costs of reclamation and other relevant factors. Table I gives the area proposed for reclamation in each category, the cost of reclamation, the additional food production and the cost of reclamation per maund of additional food production.

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TABLE I

Cost of reclamation of land in different categories and estimated additional production

Category	Description	Area proposed for reclamation (acres)	Average cost of reclamation per acre (Rs.)	Total cost of reclamation (Rs. lakhs)	Additional production per acre (maunds)	Total additional production (maunds)	Value of total additional production (Rs. lakhs)	Value of additional production per acre (Rs.)	Average cost of reclamation per maund of additional production (Rs.)
I	Eroded lands	85,379	120	102·61	8	6,83,032	81·96	96	15·0
II	*Char* lands	12,594	100	12·59	30	3,77,820	45·34	360	3·3
III	Flat (terai) lands	13,869	100	13·87	6	83,214	9·98	72	16·6
IV	Saline lands	1,798	160	2·88	15	26,970	3·24	180	10·7
	TOTAL ..	1,13,640		131·95		11,71,036	140·52		

N.B.—The main food crops of the areas included in categories I to IV are paddy, maize, *kulthi*, millets and groundnut. A common price of Rs. 12 per maund is assumed.

75. It would be seen from the table that the cost of reclaiming 1,13,640 acres in categories I to IV comes to about Rs. 1.32 crores, *i.e.*, about Rs. 116 per acre. The estimated additional food production from the reclaimed lands is 42,895 tons valued at about Rs. 1.40 crores. The average cost of reclamation, therefore, is economic in terms of additional production, since the total expenditure involved can be recovered in one or two crop seasons.

76. As regards the economics of reclamation of the different categories of wastelands, category II seems to be the most profitable in terms of additinal food production per acre, *i.e.*, 30 maunds, for an expenditure of Rs. 100 per acre on reclamation. Although this is a definite advantage, the lands included in this category are subject to flood and erosion hazards, and the settlement on these lands is also precarious. On the other hand, category I offers the greatest promise for increasing agricultural production since large tracts of such lands are available in the districts of Midnapore, Bankura and Purulia, and the average cost of reclamation is also not high. Further, these areas are extremely suitable for undertaking resettlement projects for the rehabilitation of displaced persons from East Pakistan. The cost of reclamation of saline lands included in category IV is also economic, but the area available is very small. The wastelands in category III do not hold much promise for increased production, but the position will materially change when irrigation becomes available, for which there seem to be good prospects.

Priorities between different categories of reclaimable lands

77. We now come to the assignment of priorities between the four categories of reclaimable lands located in the State.

78. We recommend that the eroded lands included in category I may be assigned the highest priority in view of the following reasons :—

(*a*) Large tracts of eroded land are available in the State. These lands, when reclaimed, will materially assist in increasing agricultural production, and in settling local landless labourers, and displaced persons from East Pakistan whose rehabilitation is a matter of paramount interest to the State (In the light of his past experience, Mr. H. Banerji, Development Commissioner, West Bengal, is not in favour of settling displaced persons from East Pakistan on reclaimed lands in category I as the climate of Midnapore, Purulia and Bankura is very dry and thus not congenial to persons used to the humid climate of East Pakistan).

(*b*) Reclamation and resettlement projects in similar types of land are already in progress in certain parts of the Midnapore district, and the experience gained there will be useful in extending the operations to other areas with a greater degree of confidence.

78.1. Among the various blocks offered for reclamation in this category, those in the districts of Midnapore and Bankura may be taken up first followed by the blocks in Purulia. In particular, the wastelands located in the jurisdiction of the police stations of Salboni, Garbeta, Taldangra, Simlapal, Onda and Vishnupur may be assigned a high priority as these areas are likely to receive irrigation from the Kangsabati

Project. The lands located in the jurisdiction of the Sonamukhi police station are also very suitable as the soil is alluvium and irrigation can be provided by sinking shallow wells.

79. Next in the order of priority are the *char* lands included in category II. Although these lands are fertile and are capable of producing good crops of paddy, sugarcane, jute, etc., and the cost of their reclamation is also low, we have not assigned them a higher priority because of the flood and erosion hazards to which they are subject, and the difficulties of large-scale settlement in the areas.

80. The area included in category IV is small, but the lands are capable of producing good crops of paddy because of the alluvium nature of the soil. We suggest that these wastelands should rank third in the order of priority.

81. As regards the lands included in category III, these are poor in fertility and do not retain moisture for long, although they are located in an area with a rainfall of 120 to 180 inches. We understand that the exploratory tubewells in the area have proved successful, and that the work of installing tube-wells will be taken up during the Third Plan period. We, therefore, recommend that these lands should be reclaimed only when they are assured of irrigation supply.

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SECTION D

(Summary of general conclusions and recommendations)

1. Of the total area of 2.54 million acres under the head "other uncultivated lands excluding fallows" and "current fallows", about 1.13 lakh acres have been located in the State for reclamation in blocks of the sizes of 250 acres or more.

(Paragraph 15)

2. The wastelands found in the State may be broadly divided into following four categories :—

I—Eroded lands,
II—*Char* lands,
III—*Terai* lands (flat lands at the foot of the hills), and
IV—Saline lands.

(Paragraph 19)

3. The distribution of wastelands in categories I to IV is as under :—

Category	*Area* (acres)
I	85,379
II	12,594
III	13, 869
IV	1,798
TOTAL	1,13,640

(Paragraph 20)

4. The wastelands found in the districts of Midnapore, Purulia and Bankura falling in category I are mostly undulating, with large upland tracts made up of ridges alternating with valleys. The soils are generally red and lateritic, varying in texture from sandy loam to loam, but the predominant type is sandy loam with *murum* on the surface. Land reclamation in these areas is primarily soil and water conservation work. The average cost of reclamation would be Rs. 120 per acre.

(Paragraphs 43, 44 and 45)

5. It is necessary to introduce legislation on the lines of the model Act prepared by the Government of India and circulated to the State Governments, empowering the State Government to undertake soil conservation measures in the State.

(Paragraph 46)

6. The selected projects on soil conservation should be on a complete watershed basis.

(Paragraph 46)

7. Field experiments should be laid out to study the different methods of bunding in the lateritic and red soil tracts, with a view to determining as to which method should be adopted with special reference to its cost and effectiveness.

(Paragraph 46)

8. The *char* lands included in category II are very fertile and can produce good crops of paddy, sugarcane, jute, etc. The flood and erosion hazards make large-scale habitation in this area somewhat precarious, although settlements are possible at sites which are not subject to these hazards. The cost of removing the shrubs and bushes and ploughing up the land to make it fit for cultivation, is estimated at between Rs. 75 and Rs. 100 per acre.

(Paragraph 50)

9. The flat (*terai*) lands are very poor in nitrogen, phosphate, potassium and organic matter, and do not retain moisture for long, although they are located in an area with a rainfall of 120 to 180 inches. They are covered with shrubs and grasses. The cost of reclamation is estimated at Rs. 100 per acre.

(Paragraph 51)

10. The saline lands located in the Midnapore district are rich in organic matter and plant nutrients. Salinity in the lands is not high, but they are slightly eroded. To reclaim these lands, suitable ameliorative measures for the removal of salinity should be undertaken. The cost of reclamation is estimated at about Rs. 160 per acre.

(Paragraph 52)

11. The wastelands in the State are owned either by private individuals, the Government, or village panchayats. The wastelands belonging to private individuals can be handed over, after reclamation, to their respective owners for follow-on cultivation. In order to bring the lands belonging to the Government under cultivation, it is proposed to establish co-operative colonies of settlers from East Pakistan, or to allot these lands to the landless labourers, members of the Scheduled Castes and the Scheduled Tribes, etc. The common lands may be given to the village panchayats for arranging follow-on cultivation.

(Paragraphs 53, 54 and 55)

12. Detailed soil surveys for land-use should be carried out in each area proposed for reclamation, so that the requisite information on the proper utilisation of land is available.

(Paragraph 57)

13. In order to carry out the programme of soil conservation indicated in the report, we recommend the establishment in the Directorate of Agriculture of a separate wing of soil conservation under the Superintending Engineer and Joint Director of Agriculture (Engineering), who may be assisted by three Divisional Soil Conservation Officers and the necessary field staff.

(Paragraph 58)

14. After soil conservation measures have been carried out, the responsibility for the follow-on cultivation should be that of the normal staff of the Agriculture Department. The agricultural staff should suggest suitable cropping patterns and also introduce improved agricultural practices in the reclaimed areas.

(Paragraph 59)

15. Wherever irrigation facilities can be provided by the construction of shallow wells or tube-wells, loans and/or subsidy may be given to the cultivators on a liberal scale.

(Paragraph 60)

16. Green manuring should be extensively practised in the reclaimed lands in order to build up their organic matter content and to improve soil structure.

(Paragraph 61)

17. In the areas of the lateritic or red soil belt where irrigation facilities are not available, percolation tanks or earthen embankments across big gullies may be constructed to hold water. The construction of such tanks helps in the storage of rain-water for agricultural and other purposes, and also checks erosion on the down-stream side of the gullies.

(Paragraph 62)

18. In the Teesta *char* lands, advantage should be taken of the nearness of the sub-soil water from the ground-level to grow winter crops by adopting suitable cultivation practices.

(Paragraph 63)

19. Although the *char* lands are fertile, sound agronomic practices should be developed so that the fertility of these lands is maintained at a high level.

(Paragraph 64)

20. The total cost of reclaiming 1,13,640 acres of land in categories I to IV comes to Rs. 1.32 crores, *i.e.*, about Rs. 116 per acre. The estimated additional production from the reclaimed lands is 42,895 tons valued at about 1.40 crores. The average cost of reclamation is, therefore, economic in terms of additional production, since the total expenditure involved can be recovered in one or two crop seasons.

(Paragraph 75)

21. A study of the cost of reclamation of lands in the different categories reveals that category II is the most profitable in terms of additional food production. On the other hand, category I offers the greatest promise for increasing agricultural production since large tracts of such lands are available and the average cost of their reclamation is also not high. The cost of reclamation of saline lands is also economic, but the area available is small. The wastelands in category III do not at present hold much promise for increased production, but the position will materially change when irrigation becomes available, for which there seem to be good prospects.

(Paragraph 76)

22. The following is the order of priority assigned to the different categories of wastelands on the basis of all relevant factors :—

	Priority	
Category	I	1
Category	II	2
Category	IV	3
Category	III	4

(Paragraphs 77 to 81)

Members :

Sd.
(B. N. Uppal)

Sd.
(F. C. Gera)

Sd.
(J. P. Mital)

Sd.
(M. S. V. Rama Rao)

Co-opted Members :

Sd.
(H. Banerjee)
Development Commissioner.

Sd.
(B. N. Banerjee)
Superintending Engineer and Joint Director of Agriculture (Engineering).

Sd.
(A. Chatterjee)
Asst. Secretary, Land and
Land Revenue Department.

Sd.
(A. Das Gupta)
Dy. Secretary, Board of Revenue.

Sd.
(H. M. Brahma)
P.A. to Chief Engineer (Irrigation).

Sd.
(A. S. Venu Gopalan)
Secretary.

APPENDICES

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APPENDIX 'A'

K. R. DAMLE, I.C.S.,

SECRETARY.

NO. F. 1024/SPL/59
GOVERNMENT OF INDIA
MINISTRY OF FOOD & AGRICULTURE
(DEPARTMENT OF AGRICULTURE)

New Delhi, June 11, 1959

MY DEAR

You will agree that the importance of reclamation of culturable waste lands for the purpose of increased agricultural production cannot be overemphasised. The extent of culturable waste lands in the country has been variously estimated and the figures run into millions of acres. These waste lands are of two categories :

(*a*) lands which are really adjuncts of village *abadis* and are meant to serve as pastures and fuel forests or sites for the extension of the *abadis;* and

(*b*) large blocks of land which have either gone out of cultivation or have never been brought under cultivation.

It is the latter category which affords the greatest promise for increased agricultural production. The site of large areas of uncultivated land has yet to be determined. Government, therefore, have decided to appoint a Committee of experts which will work in collaboration with experts in the States in regard to which the Committee will make the investigations.

2. The following will be the terms of reference of the Committee:—

(1) to make a survey of land classified as "other uncultivated land excluding fallow lands" and "fallow lands other than current fallows" and locate areas where large blocks of land are available for reclamation and resettlement;

(2) to suggest suitable measures for reclamation according to conditions in different areas and estimate the cost of reclamation and colonisation and the financial assistance and agricultural extension and training necessary for the settlers (the settlements being made on a co-operative basis);

(3) to suggest the terms and conditions upon which settlement should be made, the areas to be allotted and the payments to be made by settlers' co-operatives; and

(4) to estimate the economic aspects of such reclamation in terms of the expenditure involved, the likely addition to food production and the employment and income that would become available to settlers and their families and to lay down the priorities *inter-se* between different categories of reclaimable lands.

3. The Committe will consist of the following :—

(1)	Dr. B. N. Uppal Agricultural Commissioner Government of India.	Chairman.
(2)	*Dr. J. K. Basu, Senior Director of Soil Conservation, Government of India.	Member
(3)	Shri F. C. Gera, Chairman, Central Tractor Organisation.	Member
(4)	Shri J. P. Mital, Irrigation Adviser, Ministry of Community Development and Co-operation.	Member

In addition, the Committee will co-opt in individual States the following officers :—

(1) The Development Commissioner;
(2) The Revenue Secretary;
(3) The Secretary of the Agriculture/Forest Department, or his nominee; and
(4) A representative of the Irrigation Department.

4. During the course of the next two or three months, the Committee will take up preliminary work for collection of data with the help of the State Governments and will then visit individual States from the beginnnig of September, 1959. The intention is that the Committee should complete its work and submit its proposals in respect of one State in about a month and then proceed to take up the investigation in another State. In order to ensure effective coordination and speedy completion of the work, it is suggested that each State Government/Union Territory may kindly appoint a fairly Senior officer who would be able to devote sufficient time to the work of the Committee, help it in collecting the necessary information and carry on correspondence with it. The name and designation of the officer may kindly be communicated to Dr. B. N. Uppal, Chairman of the Committee.

5. In view of the urgent need for bringing waste lands, wherever available, under cultivation and thus increasing agricultural production, it is hoped that the State Governments would kindly extend their full cooperation and provide the necessary facilities for the work of this Committee.

Yours sincerely,
(Sd.) K. R. DAMLE

Chief Secretaries,
All States and Union Territories.

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*On retirement of Dr. J. K. Basu, Shri M. S. V. Rama Rao, Senior Director of Soil Conservation, Government of India, was appointed a Member from the 3rd February 1960 *vide* Memo. No. 12-1/59-GMF (Co), dated the 3rd February, 1960 (copy enclosed)

No. 12-1/59-GMF(Co)

GOVERNMENT OF INDIA

MINISTRY OF FOOD & AGRICULTURE
(DEPARTMENT OF AGRICULTURE)

New Delhi, the 3rd February, 1960

SUBJECT :—*Reclamation of culturable waste lands in the country—Setting up of a Committee.*

Reference this Ministry's Express letter of even number dated the 17th June, 1959, on the subject mentioned above. The following amendment may plase be made in regard to the Membership of the Committee as mentioned in D.O. No. F. 1024/SPL/59, dated the 11th June, 1959, referred to therein :—

> "Shri M. S. V. Rama Rao,
> Senior Director of Soil Conservation,
> Government of India,
> in place of Dr. J. K. Basu since retired."

(Sd.) V. BALASUBRAMANIAN
Under Secretary

APPENDIX 'B'

Questionnaire issued by the Wastelands Survey and Reclamation Committee.

1. What is the total area of culturable wasteland in your State?

(Culturable waste land is defined as under :—

All lands available for cultivation, whether not taken up for cultivation or abandoned after a few years for one reason or the other. Such lands may be either fallow or covered with shrubs and jungles and which are not put to any use. They may be assessed or unassessed or may be in isolated blocks or within cultivated holdings. Land once cultivated but not cultivated for five years in succession is included in this category).

2. What is the area under permanent pastures and other grazing lands?

3. What is the extent of land under miscellaneous trees and groves?

4. What is the extent of fallow lands other than current fallows?

(Current fallows are defined as those lands which remain fallow for the current year only.

Lands other than current fallows are defined as lands which are fallow for more than one year but less than five years)

5. Out of the areas at questions 1, 2, 3 and 4 above, is it possible to demarcate blocks of 1,000 acres or more for purposes of colonization and resettlement? If so, how many such blocks?

6. How many blocks could be carved out if the size of the block is reduced from 1,000 acres and more to 500 acres and more? So far as blocks of 1,000 acres or more are concerned, please give details of each block in the form at Appendix 'A' attached.

7. Have any colonization and resettlement operations been carried out in your State during the last 10 years? If so, please give details of areas colonized and resettled, the number of persons resettled, the location of the colonized areas, terms of allotment, and whether the colonization has been successful. The extent of financial assistance given to settlers may also be indicated.

8. Any other remarks that the State Government may like to make in the light of the terms of reference of the Committee.

APPENDIX 'A' VIDE ITEM 6 OF THE QUESTIONNAIRE

STATE :

DISTRICT :

Details in respect of Block No.——————————*consisting of 1,000 acres or more*

(Where blocks of 1,000 acres or more lie contiguously, a single form can be used for the entire area; otherwise separate forms should be used for each block of land).

1. Where is the block located? (Here mention the nearest village or town and the Revenue Tehsil in which the block is located).
2. Is the area included in any Community Development Block? If so, please give the name of the Block.
3. What is the nearest Railway Station and the distance of the Station from the block?
4. What is the nearest Post Office and the distance of the Post Office from the block?
5. What is the nearest Telegraph Office and the distance of the Telegraph Office from the block?
6. Is the block connected by road with adjoining villages and towns?
7. If so, is the road fair-weather or all-weather?
8. What is the total area of the blocks? (If possible, please also supply a map of the block).
9. How much of the area belongs to Government or is with the Panchayats?
10. How much of the area is privately owned?
11. Is it necessary to acquire the whole or part of the land which is privately owned, in order to carry out the colonization operations in the block successfully?

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12. If so, what would be the likely cost of acquisition ?

13. Is the area of the land suitable for cultivation as it is, or would it be necessary to do some reclamation work before it could be allotted ?

14. If reclamation work is necessary, indicate whether the land is infested with jungle or with weeds or with shrubs and bushes.

15. Whether the land could be reclaimed with the use of manual labour or will it require reclamation by heavy tractors ? If the former, is adequate labour locally available ?

16. If there are no trees or weeds or shrubs & bushes on the land, is the land eroded ? If eroded, please indicate the extent of erosion and the soil conservation measures necessary to make it fit for cultivation.

17. What would be the approximate cost of reclamation or soil conservation per acre of land in the block ?

18. What is the type of soil in the block ? (alluviums, black, red or lateritic).

19. Is the land flat or gently sloping or steep ? What is the depth of the soil ?

20. What crops are grown in the area round about the block ?

21. What is the yield per acre of each crop ?

22. What is the nearest marketing centre for these crops ?

23. What is the extent and distribution of rainfall in the area ?

24. Can irrigation facilities be made available for the block ? If so, what kind of facilities ?

25. Whether these irrigation facilities will be perennial or non-perennial ?

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26. If no irrigation facilities exist at present, whether any irrigation projects likely to be taken up in Third Year Plan will cover this land ?
27. What is the depth of sub-soil water ? Is water sweet or brackish ?
28. Are anti-malarial operations necessary in the area for successful colonization ?
29. Is any endemic disease prevalent in the area ? If so. do the State Government contemplate any measures to combat this disease ?
30. Is drinking water available in the block ?
31. Are there any drinking water wells in use ?
32. Is the area subject to depredations of wild animals ? If so, what animals ?
33. Is the block likely to attract settlers from distant places in the State or from other States ?
34. If the block is not likely to attract settlers from distant places in the State or from other States, what kind of settlers would you recommend for colonization of the block ?
35. Do you think educated unemployed could be successfully settled in the block ?
36. What should be the unit of allotment per settler ?
37. Would you suggest that the settlers should put up their homesteads on allotted lands, or would you like to set up *abadis* for them ? If the latter, what should be the unit of allotment for residential purposes in the village *abadi ?*
38. Would it be necessary to organise any training for the settlers, before they are allotted land ? (the settlement will be on cooperative basis).
39. Any other details which you may like to give in the light of the terms of reference.

APPENDIX 'C'

DR. B. N. UPPAL,
CHAIRMAN, WASTELANDS SURVEY
& RECLAMATION COMMITTEE.

D.O. No. F. /59-WLS & RC.

GOVERNMENT OF INDIA
MINISTRY OF FOOD AND AGRICULTURE
DEPARTMENT OF AGRICULTURE
'KRISHI BHAVAN'

New Delhi, January 2, 1960
Paus 12, 1881

DEAR SHRI

Kindly refer to my letter of even number dated the 10th August, 1959, with which a copy of the questionnaire issued by the Committee was forwarded to you.

2. According to the questionnaire, the State Government was required to demarcate blocks of 1,000 acres or more out of the total area under "culturable waste", "permanent pastures and other grazing lands", "miscellaneous trees and groves" and "fallows other than current fallows", and to give full details of the blocks so selected in appendix 'A' attached to the questionnaire. The size of blocks was fixed at 1,000 acres or more as it was felt by the Committee that a sufficient number of blocks of this size would be available in all the States. The information now received from some of the States and our discussions with the Liaison Officers of the States of Madhya Pradesh, Bihar and Orissa have led us to think that the availability of culturable waste land in blocks of 1,000 acres or more for purposes of reclamation and resettlement may be limited. We have, therefore, decided to collect information as in Appendix 'A' to the questionnaire issued with the Committee's letter referred to above, for all blocks measuring 250 acres or more.

3. While obtaining this information from the districts, it may be useful to get a certificate from the district officers that the areas other than those in blocks of 250 acres or more out of the total areas under the categories mentioned in para 2 above, are scattered in bits measuring less than 250 acres.

4. I am to request that urgent steps may kindly be taken to collect the required information in respect of blocks measuring 250 acres or more so that the requisite information is available to the Committee by the 31st January, 1960. In view of the fact that the Committee is required to complete its work within the next six months, it is requested that the information may kindly be obtained on a priority basis by deputing some officials to the different districts, if necessary. This should not, however, delay the despatch of information in regard to blocks measuring 1,000 acres or more, which may have already been collected.

5. It appears that the term 'contiguous' used in Appendix 'A' to the questionnaire sent to the States along with our letter of even number dated the 10th August, 1959, requires elucidation. I may observe that even if a block is interspersed with a few cultivators' holdings or some natural obstructions, it should be considered more or less compact or 'contiguous' so long as the operations for the reclamation of land included in it can be undertaken on an economic basis.

Yours sincerelv,
(Sd.) B. N. UPPAL

All Liaison Officers
in the States and Union Territories.

APPENDIX D

Average yield in maunds per acre of the principal crops in West Bengal (1959-60)

District/crop	Rice			Wheat	Barley	Gram	@Potato	Sugarcane	Rape and Mustard	*Jute	*Mesta
	Autumn (aus)	Winter (aman)	Summer (boro)								
24-Parganas ..	10·30	8·58	8·89	6·98	4·37	5·10	78·95	426·95	1·14	1·98	2·35
Nadia	10·17	5·82	11·42	6·01	5·00	6·53	63·19	488·14	4·97	2·65	1·83
Murshidabad ..	6·55	8·69	13·91	7·93	5·24	3·99	84·23	480·74	5·07	2·40	2·00
Burdwan	11·80	12·84	12·00	7·25	4·37	5·15	117·55	443·16	2·49	3·34	3·00
Birbhum	11·48	12·70	13·50	6·53	4·37	4·78	94·63	409·19	2·49	2·72	2·00
Midnapur	7·61	10·54	10·00	5·16	—	3·94	84·84	394·28	1·01	3·84	1·10
Bankura	9·50	12·28	9·50	6·13	4·37	3·47	83·35	331·86	2·49	2·72	1·25
Hooghly	11·56	11·21	9·00	9·01	4·37	4·21	136·41	532·09	2·49	3·23	2·50
Howrah	12·27	5·67	8·00	6·98	4·37	4·58	95·48	536·45	2·49	2·20	2·50
Jalpaiguri	6·02	11·85	8·00	6·98	4·39	4·58	37·93	368·79	1·34	3·38	2·20
Darjeeling	4·72	14·27		7·00	5·00	6·00	56·20	420·00	3·00	3·15	1·54
Malda	8·28	9·43	15·00	6·38	4·73	4·25	65·90	398·80	2·43	1·92	1·50
West Dinajpur ..	8·41	10·30	8·35	2·49	3·68	3·61	64·60	300·58	2·52	1·97	1·04
Cooch-Behar ..	4·41	9·87	10·00	10·55	4·37	4·58	71·37	368·79	1·13	3·06	2·25
Purulia	3·03	12·54	15·00	9·35	4·37	6·43	—	404·72	2·49	2·72	1·90
STATE ..	8·48	10·69	11·77	7·15	4·62	5·11	99·58	431·56	2·75	2·63	1·90

* Bales of 400 lbs. each.

@ Figures relate to the year 1958-59.

APPENDIX E

Land utilization statistics for West Bengal for the year 1956-57 *(district-wise)*

District	Total geographical area		Forests	Area not available for cultivation	Other uncultivated land excluding current fallows	Current fallows	Net area sown
	By professional survey	By village papers					
24-Parganas	36,30,200	36,30,200	10,53,000	6,35,000	2,50,000	67,200	16,25,000
Nadia	9,65,800	9,65,800	—	1,38,000	80,000	56,500	6,91,300
Murshidabad	13,26,100	13,26,100	—	1,83,700	90,000	1,20,600	9,31,800
Burdawn	17,31,500	17,31,500	31,600	3,38,400	1,16,600	49,200	11,95,700
Birbhum	11,15,500	11,15,500	6,000	1,75,000	41,000	78,300	8,15,200
Bankura	16,94,000	16,94,000	1,95,500	1,49,500	2,37,300	2,60,500	8,51,200
Midnapur	33,62,000	33,62,000	3,81,300	3,11,700	2,46,000	2,07,800	22,15,200
Hooghly	7,75,700	7,75,000	600	1,48,400	31,900	7,800	5,87,000
Howrah	3,58,500	3,58,500	—	87,000	12,100	35,300	2,24,100
Jalpaiguri	15,19,600	15,19,600	3,61,400	2,69,000	1,85,000	50,900	6,53,300
Darjeeling	7,67,800	7,67,800	2,90,800	1,84,500	49,000	26,000	2,17,500
Malda	8,90,900	8,90,900	—	89,000	51,000	41,400	7,09,500
West Dinajpur	8,86,700	8,86,700	—	1,45,500	38,700	18,100	6,84,400
Cooch-Behar	8,46,500	8,46,500*	—	1,11,700	85,800	10,100	6,15,800
TOTAL	1,98,70,800	1,98,70,800*	23,20,200	29,66,400	15,14,400	10,29,700	1,20,17,000

NOTE.—The statement does not include figures in respect of the territories transferred from Bihar to West Bengal as a result of reorganisation of States.

*Include 23,100 acres for which detailed agricultural statistics are not available.

APPENDIX F

Statement showing details of blocks in categories I, II, III and IV offered for reclamation in West Bengal

District	Name of Block	Block No.	Location of the block (Mouza)	Nearest Rly. Station	Accessible by fair/all-weather road	Whether included in C.D. Block	Area (acres)	Amount of rain-fall (inches)	Depth and nature of sub-soil water	Endemic diseases
1	2	3	4	5	6	7	8	9	10	11
					Category I					
Midnapur	Keshiary	1	Budhebudhi, Kulbani and Lanspal.	Contai Road	Fair weather	Yes	736	58-30 feet,	Sweet	No.
	Kharagpur	2	Kantasol, Patua, Sagpara and Kunisal Sadatpur, Raykelgeria Kalyan Protappur and Ratuasol.	Kharagpur	Fair weather	No	1,263	58-25 feet,	Sweet	No.
	Salboni	3	Balibundh, Perakuli Mathurapur, Bhutasol, Pirachak, Perakuli, Masru, Banskapua, Dubrajpur, Lengtisal and Brindabanpur.	Salboni	Fair weather	No	1,847	58-40 feet,	Sweet	Not known.
	Garbeta	4	*Vide* Appendix F(*a*)	Garbeta	Fair weather	No	7,863	58-40 feet,	Sweet	Not known.
	Chandrakona	5	Labgar	Chandrakona Road.	Fair weather	Yes	236	58-20-40 feet,	Sweet	No.
	Jhargram	6	Lalitasol, Barjudi, Dogerya, Indikhara, Dudkundi, Baradanga and Balla.	Jhargram	All weather	No	1,420	58-60-80 feet,	Sweet	Not known.

Purulia	Sankarail	7	Susamgeria, Sukhukhali, Bakra, Protappur, Moruisol, Katuimara, Itamara, Nischinda, Bhalkisol, Angarnath, Baidapura, Sushigerya, Atta Dihi and Sankrail.	Kalaikunda	All weather	No	2,808	58	30 feet,	Sweet	No.
	Binpur	8	Talpukuria, Agnibal, Dakai and Rangamatya.	Binpur	Fair weather	Yes	1,232	58	60-80 feet,	Sweet	Not known.
	Purulia	9	*Vide* Appendix F(*a*)	Purulia	Fair weather	No	19,000	50	30 feet,	Sweet	Not known.
	Jalpur	10	*Vide* Appendix F(*a*)	Jalpur	Fair weather	No	9,500	50	30 feet,	Sweet	Not known.
	Jhalda	11	Bamunia, Kanudi, Baraharka, Jhalda Barudi, Katsila and Jinduru.	Jhalda	Fair weather	Yes	500	50	30 feet,	Sweet	Not known.
	Para	12	Lepanya, Jaupara, Bangalia, Phusrabaia, Jaorberya, Kush gora and Jabarra.	Anara	Fair weather	No	7,500	60	30 feet,	Sweet	Not known.
	Hura	13	*Vide* Appendix F(*a*)	Purulia	Fair weather	Yes	5,000	50	30 feet,	Sweet	Not known.
	Burabazar	14	Bamandiha, Turku, Manpur, Shyamzola, Basudevpur, Rupapalia, Harunda, Lodiha, Tentuladi, Bajra, Raghunathpur, Bhuinayadihi, Baramukru, Rangagara, Roladi and Punhasa.	Purulia	Fair weather	No	1,750	50	30 feet,	Sweet	Not known.
	Kashipur	15	*Vide* Appendix F(*a*)	Adra	Fair weather	No	8,000	50	30 feet,	Sweet	Not known.
	Puncha	16	*Vide* Appendix F(*a*)	Purulia	Fair weather	Yes	6,000	50	30 feet,	Sweet	Not known.

APPENDIX F—*contd.*

1	2	3	4	5	6	7	8	9	10	11
Bankura	Taldangra	17	Dauni, Chakmajuri, Kaniari, and Jamarboni, Joypur.	Bankura	Fair weather	Yes	1,376	50	16 feet, Sweet	Not known.
	Simlapal	18	Masatkhal, Rambani, Jamirdiha, Bagakulia, Akaria-Jamboni, and Bamanpatharia.	Bankura	All weather	Yes	1,145	50	16 feet, Sweet	Not known.
	Onda	19	Chagulia, Gopalpur, Etali, Krishnasingpur, Bhalukkhulia, Brindabanpur, Singhati, Ramarchuapuan, Kharibàribandhi, Chakuaijuri and Vedua.	Onda	All weather	Yes	6,100	50	16 feet, Sweet	Not known.
	Vishnupur	20	Hubmara, Chakuparsol, Chitrang, Chota Bangla Zaha, Dhaboni.	Vishnupur	Fair weather	No	875	50	16 feet, Sweet	Not known.
	Sonamukhi	21	Kenety, Nityanandapur Beleda, Amritpur, Besia, Bora and Plasura.	Piardoba	Fair weather	Yes	1,291	50	16 feet, Sweet	Not known.
					Category II					
Jalpaiguri	Mal	22	*Vide* Appendix F (*a*)	Odlabari, Lalaguri, Jalpaiguri, and Damohani.	Fair weather	No	12,594	156	5 feet, Sweet	No.

Category III

Jalpaiguri	Mavnaguri	23	Purba Saramati, Padamati Baikur, Gangaram, Brahmapur, Charchura Tandai, Jhartargila,	Bhotapatti, Madarganj	Fair weather	Yes	2,958	156	10 feet,	Sweet	No.
	Dhupguri	24	Prayagpur, Bagribari, Dambari and Dakshin Kharibari.	Banarhat	Fair weather	Yes	1,194	156	10 feet,	Sweet	No.
	Jalpaiguri	25	Barapatia, Natunbas, Patkata, Satkhamar, Nandanpur, Katchua, Boalmari and Berubari.	Belakoba	Fair weather	Yes	6,532	156	10 feet,	Sweet	No.
	Nagrakata	26	Dhumpara, Kalabari, Hridaypur, Upper Kalabari, Tandu and Khairbari.	Nagrakata	Fair weather	No	2,241	156	10 fect,	Sweet	No.
	Alipurduar	27	Silbarihat & Patakhawa.	Alipurduar	Fair weather	No	568	156	10 feet,	Sweet	No.
	Falakata	28	Kunjanagar	Dolgaon	Fair weather	Yes	376	156	10 feet,	Sweet	No.

Category IV

Midnapur	Contai	29	Baguramjalpai, Mankaripur and Kanaichhata.	Contai Road	No Road		437	60	10 feet,	Sweet	No.
	Ramnagar	30	Satilapur, Bagunadiha Mukundapur, Madanmoni and Dakshin Purussattampur, Purba.	Contai Road	No Road	No	1,361	60	10 feet,	Sweet	No.

APPENDIX F(*a*)

*Statement showing the names of mouzas where wastelands have been located**

Garbeta

Chatadharampur,
Halia,
Jamsol,
Bankisol,
Sirisbani,
Kenkaroli,
Chatanakdanga,
Dubrajpur,
Lalitpur,
Damodarpur,
Telighat,
Kharkata,
Dhorgodaha,
Keshia,
Ledagamar,
Bedia,
Sahibdanga,
Bhula,
Taljangra-Khasjangal,
Godamoti,
Godamundi,
Kaibani,
Kadamdiha,
Jamua,
Madanbari,
Majumdim,
Harinasuli,
Kantagar,
Chakparbatipur,
Mohanpur,
Bansola,
Jadabbati,
Indrajitpuri,
Amsole,
Sakatai,
Pathaisol,
Namjata,

Purulia

Galbera,
Rudra,
Kalidasi,
Syamdasi,
Gondudhi,
Kanali,
Bauri,
Khajda,
Ghonga,
Bhuinadi,
Sibdi,
Gaugudi,
Amandi,
Chawelardi,
Digsili,
Amchuria,
Akarbad,
Kukurchirka,
Chakdhar,
Suklaza,
Purru,
Gobindpur,
Chituara,
Bansara,
Bundera,
Chipidi,
Tangida,
Peurua,
Kumiya,
Gurpa,
Paurusal,
Kundurka,
Chanchara,
Kantaldiha,
Sidpur,
Hutmura,
Kazcha,
Bhangra,
Chepra,
Golkumra,
Khatra,
Mamurjor,
Baguli,
Arita,
Agoya,
Nadra,
Baraseni,
Chunardihi,
Sindurpur,
Batikara,
Birolgaria,
Deuli,
Khushluka.

Jaipur

Dhabani,
Tynta,
Chilahi,
Kulara,
Ghaghari,
Jahajpur,
Khayartar,
Srirampur,
Uperkahan,
Barnadi,
Helkahan,
Bangidiri,
Karmatar,
Bansghar,
Rangad,
Patamjuri,
Rampur,
Beltar,
Bhebaidi,
Joypur,
Baragram,
Phujaria,
Rangamoti,
Chaitandi,
Agharpur,
Gunja.

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*In respect of a few blocks mentioned in Col. (4) of the statement *vide* Appendix F.

APPENDIX F(*a*)

*Statement showing names of mouzas where wastelands have been located**

Hura

Jambad,
Nimdiha,
Chitra,
Dumdumi,
Joberra,
Ladurka,
Dumursol,
Guzda,
Saldiha,
Kapalkota,
Belalahal,
Bagdisha,
Susunia,
Saharjuri,
Kharihara,
Shyamaluta,
Kalaboni,
Piuza,
Khairepiza,
Deuli,
Kusumjuri.

Kashipur

Liya,
Majurjora,
Gopalpur,
Bhulandi,
Ghutlia,
Dharena,
Sunaido,
Simla,
Damandiha,
Sinlibari,
Bekhara,
Beladanga,
Tara,
Chatahartor,
Kalloli,
Gosaniah,
Luyaria,
Narayangar,
Kartikganj,
Bardaikheari,
Sidpur,
Jurguridi.

Puncha

Rajakhanda,
Dhabani,
Chandra,
Penchara,
Jambad,
Dharampur,
Pirra,
Maheshpur,
Bansa,
Matha Gopinathpur,
Kuruktopa,
Bhuban,
Chatalalpur,
Gangadi,
Kendadi,
Laoara,
Punura,
Panipather
Bhandarpoura,
Konapara,
Sourang,
Balakdi.

Mal

Purbatatgaon,
Paschim Tatgaon,
Sundari, Basat,
Kalagainly,
Saogaon,
Uttarphulbari,
Dakhin, Phulbari,
Hanskhali,
Dakhin Odlabari,
Odalbari,
Manabari,
Turibari,
Hai Hai pato,
Purba dimdmi
Kumlai,
Rajadanga,
Apalchano,
Purba doaigaon,
Champadaga,
Chengmalpat,
Chengmai,
Dangapa,
Dakshin Chengmari,
Purba Monamari,
Paschim Monamari,
Paschim Premgaunge,
Premgaunge Majiali,
Purba Premgaunge,
Paschim Sangapara,
Purba Sangapara,
Bausuta.

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*In respect of a few blocks mentioned in Col. (4) of the statement, *vide* Appendix F.

APPENDIX G

Model scheme for settlement of landless labourers or displaced persons from East Pakistan on a co-operative basis.

(a) APPLICABLE TO THE DISTRICTS OF MIDNAPORE, PURULIA AND BANKURA

Thousands of acres of eroded lands are lying uncultivated in the districts of Midnapore, Purulia and Bankura. Thirty large-sized blocks comprising a total area of 87,177 acres have been located in these three districts for reclamation. The lands are undulating, with large upland tracts made up of ridges alternating with valleys. The rainfall ranges from 45 to 55 inches. The soils are generally red and lateritic, varying in texture from sandy loam to loam, but the predominant type is sandy loam with *murum* on the surface. Contour-bunding and terracing are the main problems of land reclamation in these areas. The average cost of reclamation is Rs. 120 per acre.

It is proposed to settle on these lands refugees from East Pakistan, or landless labourers on a co-operative basis. The settlement scheme has been modelled on the work already in progress in the State, and gives in broad outline the different steps to be taken for establishing colonies of settlers co-operatively. It is not intended to present a rigid scheme since the flexibility of details to suit local conditions is the *sine qua non* of the success of settlement schemes.

The co-operative method of organisation can be applied in settlement work in the following manner :—

(*i*) Land may be individually owned and operated, but all the services may be provided by a service co-operative of which the settlers are members, and

(*ii*) Land may be owned individually but jointly-operated (that is, co-operative joint farming).

In organising the societies, the viability and mutual knowledge and confidence which strengthen the co-operative character, should receive due weight. The broad outline of each of these patterns are indicated below.

Pattern I : Individual farming with the help of a service co-operative.

Membership would be open to all the settlers to whom land has been granted in the area of operation of the society. It may be one of the conditions of allotment that the allottee shall be a member of the co-operative society and that he will follow the production programme and technical advice offered by the society. The co-operative caters to the needs of the members, particularly those relating to credit for agricultural production, and supplies of agricultural requisites such as fertilizers, improved seeds, insecticides, etc., and of domestic requirements. The society will also arrange for the marketing of the agricultural produce of its members.

Allotment of land : The unit of land to be allotted to each settler's family may be as under :—

(*i*) Midnapore and Bankura districts	3 acres of upland and 3 acres of lowland
(*i.*) Purulia district	4 acres of upland and 4 acres of lowland

The allottees will have the right to alienate their lands after they have paid back all the advances made to them by the Government. The land to be granted to each settler should be on impartible tenure. As the lands are not initially fit for cultivation and will entail expenditure on reclamation, land revenue may be charged as follows : first year, no land revenue; second year, 1/3 of the assessed land revenue; third year, 2/3 of the assesed land revenue; and fourth year and onwards, full land revenue. It should be obligatory on the part of the allottee to cultivate the land himself or with the help of his family members.

Method of working : Each settler shall become a member of the society consisting of 50 settlers. He will receive from Government loan assistance for subscribing to the share capital of the society at the rate of Rs. 20 per member. This amount will be repayable in a period of 5 years. The maintenance expenditure given to each family will be deposited with the society; the society will release the amount to the member concerned as and when needed. The society, if desired by the members, may also provide domestic requirements against their deposits.

One agricultural officer will supervise the work of a group of five societies. He will assist each society in drawing up a production plan, and all the agricultural operations should be carried out by the members in accordance with this programme. The society will supply fertilisers, improved seeds etc., and, where necessary, heavy agricultural implements on hire. After the produce is harvested, the members will bring their produce to the society which will arrange for its marketing through the marketing society or through the normal marketing channels.

The affairs of the society will be managed by a Managing Committee elected annually by the members of the society. The society will have a manager to look after the maintenance of accounts, etc. The services of the specialised staff will be made available by the State Government.

Social amenities

(i) *Homestead* : About 1/6th of an acre of land may be allotted as a homestead plot. The value of the plot is estimated at Rs. 75.

(ii) *House building* : A sum of Rs. 500 may be advanced to each family towards the cost of building a house.

(iii) *Provision of drinking water* : One hand-pump for lifting drinking water may be provided for 30 families, and one ring-well for each group of four hand-pumps. The cost per family on this account will be Rs. 60.

(iv) *School* : For a colony of 50 families, provision may be made for a school. The capital cost of building will be Rs. 3,000 and the recrurring expenditure on running the school will be Rs. 1 000 per year. The cost per family on this account will be Rs. 100.

(v) *Dispensary* : Provision for a dispensary may be made for each colony. The cost of establishing a dispensary will be Rs. 5,000. The cost per family will be Rs. 100.

Reclamation charges : The cost of reclaiming land in the Midnapore and Bankura districts is Rs. 100 per acre; it is Rs. 130 per acre in the Purulia district. As the unit of allotment per family is 6 acres in the former two districts, and 8 acres in the latter district, the cost of reclamation per family will be Rs. 600 for settlers in the Midnapore and Bankura districts, and Rs. 1,040 for settlers in the Purulia district.

Follow-on cultivation charges : The following amounts will be required per family for meeting the follow-up cultivation charges :—

(*i*) Sisal cultivation—Rs. 565 in the first four years.

(*ii*) Paddy cultivation—Rs. 546 towards the cost of seed, fertilizers (including sludge, bonemeal) and for undertaking cultivation operations. In addition, a sum of Rs. 405 will be required for the wages of labourers for carrying out cultivation operations for paddy crop.

Provision for Rs. 750 may be made for a pair of bullocks, a bullock-cart and implements.

Besides sisal and paddy, other crops, such as cashew-nut, *sabai* grass, maize, groundnut, etc., can also be grown. The provision made above against sisal and paddy cultivation will be quite adequate to meet the expenditure on these crops.

Maintenance expenditure : During the first few years when the returns from the reclaimed lands are not likely to be sufficient to cover the expenses of the settlers, it is necessary to advance to them some money for maintenance. Provision for maintenance charges may be made for a period of 13½ months, i.e., four months in each year for the first three years, and 1½ months in the fourth year. The amount to be provided is Rs. 50 per month per family, or a total of Rs. 675 per family during the first four years.

Administrative set-up : A sum of Rs. 50 (one Manager on Rs. 100 p.m. *plus* D.A. and one-fifth the pay of Agricultural Officer at Rs. 200 p.m. *plus* D.A. Approximately, Rs. 2,500 for each colony) will be spent per family towards the administrative set-up for the execution of the settlement scheme.

To sum up, the details of expenditure per family on the various items will be as under :—

	Midapore & Bankura districts	Purulia district
	Rs.	Rs.
Value of land	700	700
Reclamation charges	600	1,040
Follow-on cultivation charges	2,266	2,266
Social amenities	835	835
Maintenance expenses	675	675
Administrative set-up	50	50
TOTAL	5,126	5,566

Pattern of assistance : Financial assistance for implementing the scheme to be given to individuals as well as the co-operative society should be as under :—

	Loan	*Grant*
	Rs.	Rs.
I. *Individual members*		
(*a*) Share capital	20	—
(*b*) Homestead plot and house	575	—
TOTAL	595	—
II. *Through the co-operative society*		
(*a*) Drinking water supply	—	60
(*b*) School	—	100
(*c*) Dispensary	—	100
(*d*) Cottage industry	200	—
(*e*) Reclamation charges	—	*600 or 1,040
(*f*) Maintenance expenses	—	675
(*g*) Follow-on cultivation		
(i) Bullocks and implements	750	—
(*ii*) Cultivation charges including cost of seed, plant materials manual labour etc.	1,516	—
(*h*) Administrative set-up	—	50
TOTAL	2,466	1,585 or 2,025

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*Rs. 600 for settlers in Midnapore and Bankura districts, and Rs. 1,040 for settlers in Purulia district.

The loans for cultivation charges, seed and manure in the case of paddy, groundnut, maize and other seasonal crops will be interest-free and recoverable after the harvest. The loans for plant material, its planting and care in the case of sisal, *sabai* grass and cashewnut will also be interest-free, but recoverable one year after the crops begin to yield.

The loans for bullocks, implements, etc. should be recovered from the third year in five annual instalments with the rate of interest as for *taccavi* loans.

The loans for the homestead plot and house building should be recovered from the fifth year in 15 annual instalments with the rate of interest as for *taccavi* loans. No interest should be charged in the first four years. The loans for cottage industry will be recovered one year after the settler begins to get returns from the industry, and in five annual instalments with the rate of interest as for *taccavi* loans.

The occupancy price of land which should be equal to three times the assessment should be paid from the sixth year in five annual instalments.

Pattern II : Individually owned but jointly operated

The cooperative joint farming settlement envisages that the ownership of the land will vest in individuals, but cultivation will be carried on jointly.

Allotment of land

The scale of allotment of lands to individuals will be as indicated in Pattern I. The difference would be that the land, although owned individually would be operated and managed jointly.

Method of working

The society will formulate a production plan through its elected Managing Committee. The Committee may formulate the day-to-day working plan for the members, either by forming some special groups or on an *ad hoc* basis. The means of cultivation, *i.e.* seeds, fertilisers, implements, bullocks, etc. will be drawn from the common pool of the society. In case any of the members have got their own bullocks, they could be taken on hire according to the local prevailing rates. The members would be paid wages for the work put in. In the initial stages, the amount of subsidies received from the Government towards the wages of labour, maintenance charges, etc. would be availed of for this purpose. The crop would be jointly harvested, and the income would be disbursed among the members after deducting the expenditure incurred by the society.

The Agricultural Officer attached to a group of five societies will provide the necessary technical guidance with regard to the formulation of the production programme, rotation of crops, use of fertilisers, choice of improved seeds, etc. The day-to-day affairs of the society will be managed by a Committee elected annually by the members. The Manager of the Society would keep the necessary accounts, etc.

The social amenities reclamation charges, follow-on cultivation charges, maintenance expenditure, administrative set-up for the organisation of scheme will be the same as in Pattern I.

This pattern will also facilitate the undertaking of the follow-on cultivation.

Pattern of assistance

All the assistance, except loans for homesteads and social amenities, should be given to the society. In case the members wish to undertake the work of house building jointly, this may be entrusted to the society.

(b) APPLICABLE TO *char* LANDS IN JALPAIGURI DISTRICT

A block comprising an area of 12,594 acres of *char* lands has been located in the district of Jalpaiguri for reclamation. The entire terrain of *char* lands is a flood plain formed by the deposition of sediments on the bed of the river Teesta. The lands are more or less flat and incline uniformly with a low gradient in all directions. The water-table of the land is high, and the entire soil-depth is within the zone of capillary fringe. The soil thus remains moist throughout the year. The area receives a rainfall of about 140 inches. The cost of reclamation is between Rs. 75 and 100 per acre.

As in the case of the districts of Midnapore, Bankura and Purulia, the co-operative method of organisation in connection with the seetlement of *char* lands can be in the following manner :—

(*i*) Land may be individually owned and operated, but all the services may be provided by a service co-operative of which the settlers are members, and

(*ii*) Land may be owned individually but jointly-operated (that is, co-operative joint farming).

As the details of both the patterns of land settlement have already been given for the districts of Midnapore, Purulia and Bankura, it is not necessary to repeat those details, except to indicate the figures under each of the separate heads. These details are as under :—

Pattern I : Individual farming with the help of a service co-operative

Allotment of land : The unit of allotment to each settler may be 4 acres of *char* land.

Social amenities

(i) Homestead : About 1/6th of an acre may be allotted as a homestead plot. The value of the plot is estimated at Rs. 15.

(ii) *House building* : Rs. 500 may be advanced as loan.

(iii) *Provision of drinking water* : One hand-pump for lifting drinking water for 40 families. The cost per family on this account will be Rs. 30.

(iv) *School* : For a colony of 50 families, provision may be made for a school. The capital cost of building will be Rs. 3,000 and the recurring expenditure on running the school will be Rs. 1,000 per year. The cost per family on this account will be Rs. 100.

(v) *Dispensary* : Provision for a dispensary may be made for each colony. The cost of establishing a dispensary will be Rs. 5,000. The cost per family will be Rs. 100.

Reclamation charges : The cost of reclamation of *char* land is Rs. 100 per acre. As the area allotted to each family is 4 acres, the cost per family on this account will be Rs. 400.

Follow-on cultivation charges : A loan of Rs. 700 will be advanced to each settler for the cultivation of crops. In addition, a sum of Rs. 400 will be required for the wages of labourers for carrying out cultivation operations.

Provision for Rs. 750 may be made for a pair of bullocks, implements, etc.

Maintenance expenses : Provision for maintenance expenses may be made for one month only in order to help the settler to establish himself.

Administrative set-up : A sum of Rs. 50 (Manager at Rs. 100 per month *plus* dearness allowance and 1/5th of the pay of Agricultural Officer at Rs. 200 per month *plus* dearness allowance. Approximately, Rs. 2,500 for a colony) will be spent on each family for the execution of the scheme.

To sum up, the details of expenditure per family on the various items will be as under :—

	Rs.
Value of land	400
Reclamation charges	400
Follow-on cultivation charges	1,850
Social amenities	745
Maintenance expenses	50
Administrative set-up	50
TOTAL	3,495

Pattern of assistance : Financial assistance for implementing the scheme to be given to individuals and to the co-operative society should be as under :—

I. *Individual members*

	Loan Rs.	Grant Rs.
(*a*) Share capital	20	—
(*b*) Homestead plot and house	515	—
TOTAL	535	—

II. *Through the co-operative society*

	Loan	Grant
(*a*) Drinking water supply	..	30
(*b*) School	..	100
(*c*) Dispensary		100
(*d*) Reclamation charges	400	—
(*e*) Maintenance expenses		50
(*f*) Follow-on cultivation		
(i) Bullocks and implements	750	—
(ii) Cultivation charges	1,100	—
(*g*) Administrative set-up	..	50
TOTAL	2,250	330

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The loans for cultivation charges, seed and manure will be interest-free and recoverable after the harvest.

The loans for bullocks, implements, etc. should be recovered from the third year in five annual instalments with the rate of interest as for *taccavi* loans.

The loans for the homestead plot and house building should be recovered from the fifth year in ten annual instalments with the rate of interest as for *taccavi* loans. No interest should be charged in the first four years.

The occupancy price of land which should be equal to three times the assessment should be paid from the third year in five annual instalments.

Pattern II : Individually owned but jointly operated

The unit of allotment, method of working and the pattern of assistance have already been indicated in the scheme for the Midnapore district. The remarks made there apply here also.

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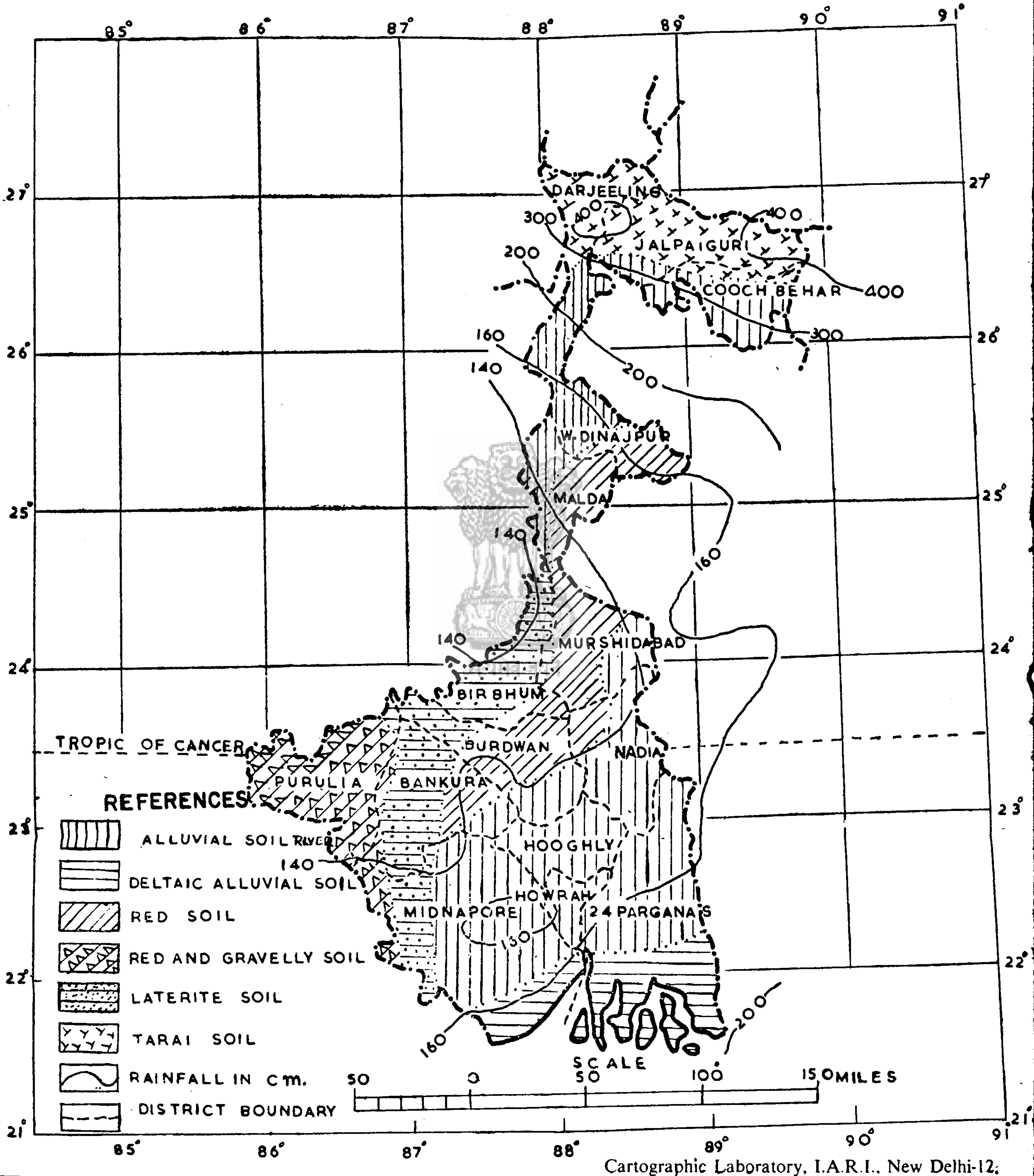
Part II

West Bengal

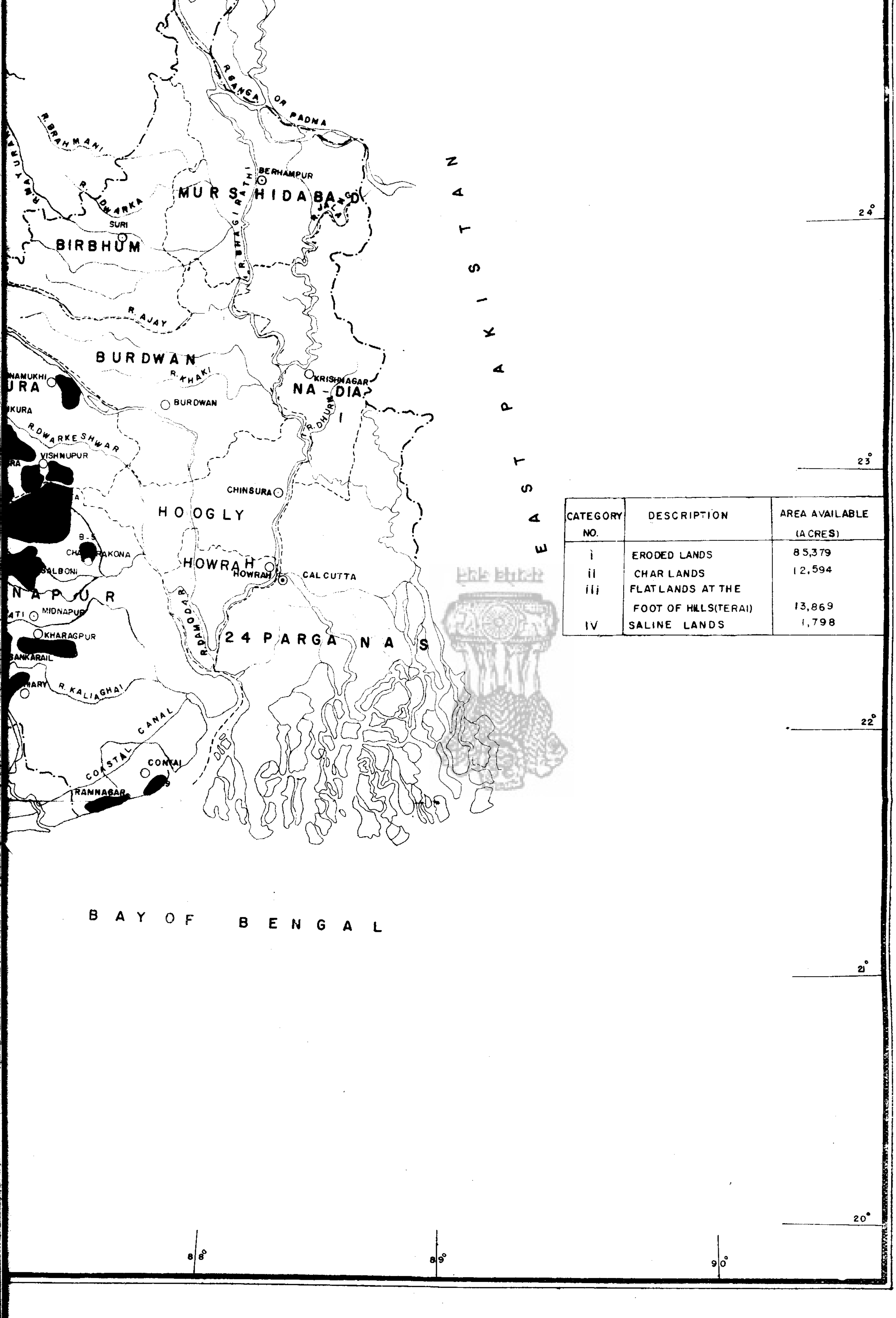
MAP I



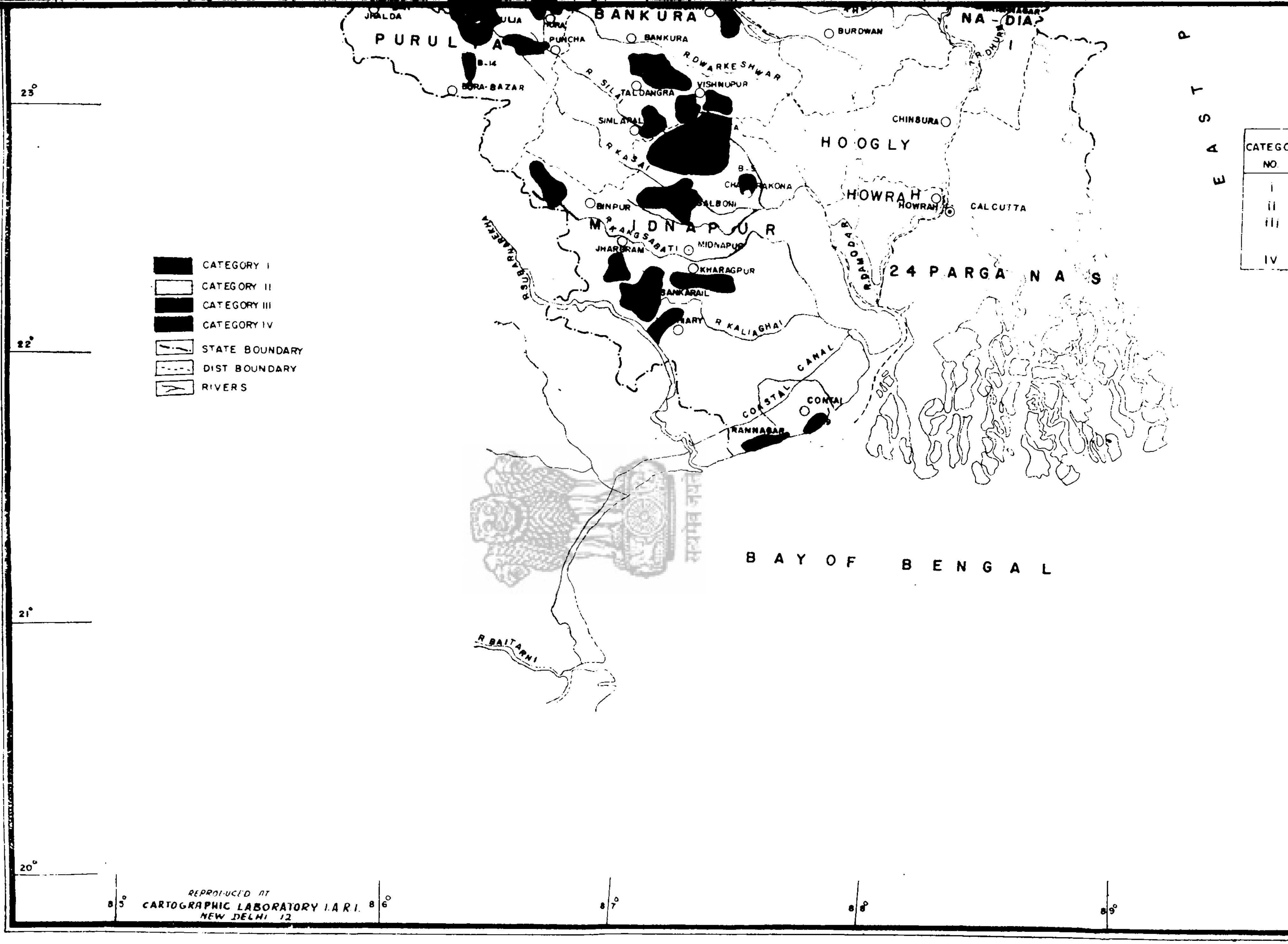
SOIL ZONES OF WEST BENGAL

SHOWING RAINFALL DISTRIBUTION

Cartographic Laboratory, I.A.R.I., New Delhi-12.



CATEGORY NO.	DESCRIPTION	AREA AVAILABLE (ACRES)
i	ERODED LANDS	85,379
ii	CHAR LANDS	12,594
iii	FLATLANDS AT THE FOOT OF HILLS(TERAI)	13,869
IV	SALINE LANDS	1,798

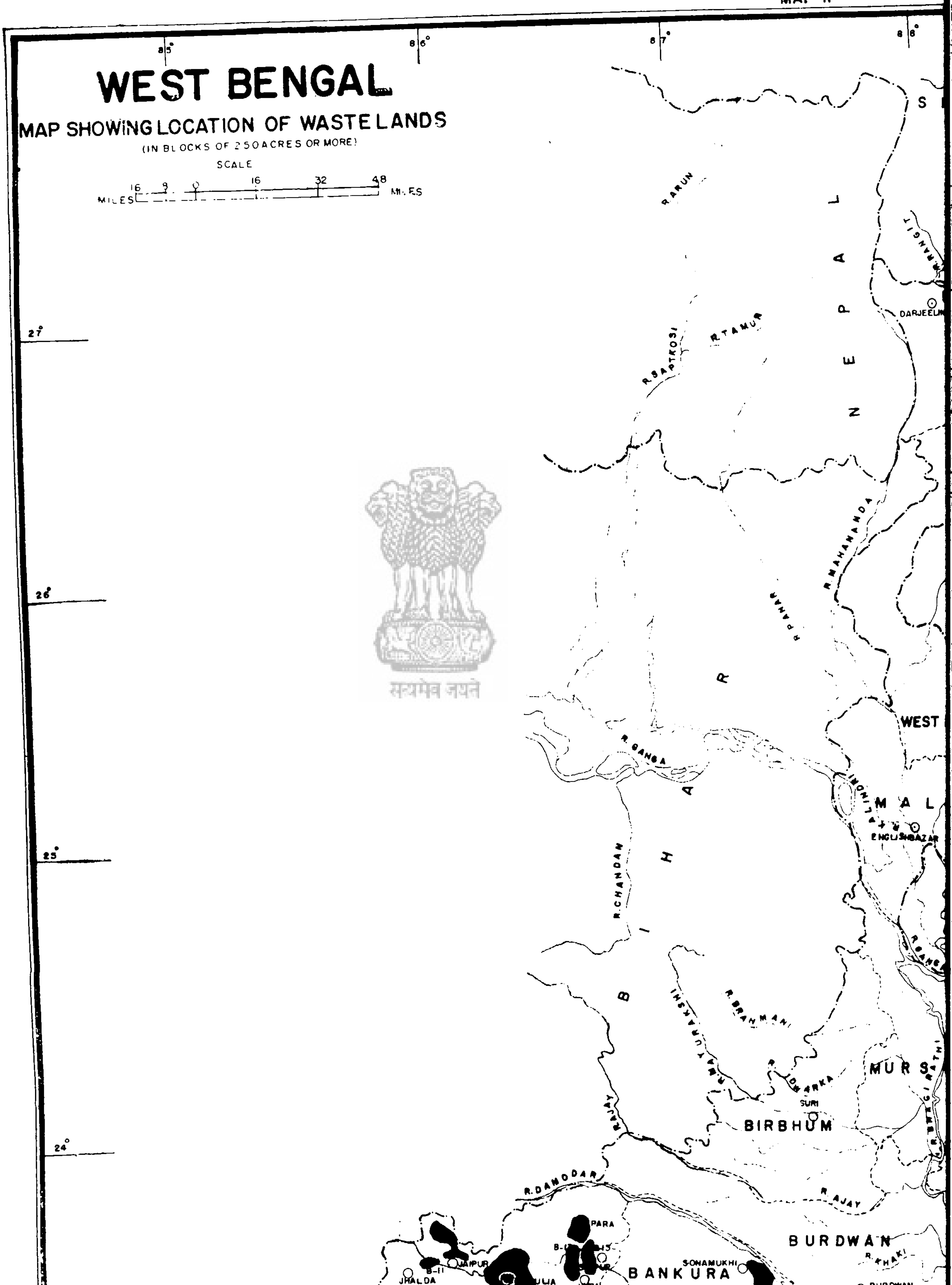


REPRODUCED AT
CARTOGRAPHIC LABORATORY I.A.R.I.
NEW DELHI 12

WEST BENGAL

MAP SHOWING LOCATION OF WASTE LANDS

(IN BLOCKS OF 250 ACRES OR MORE)



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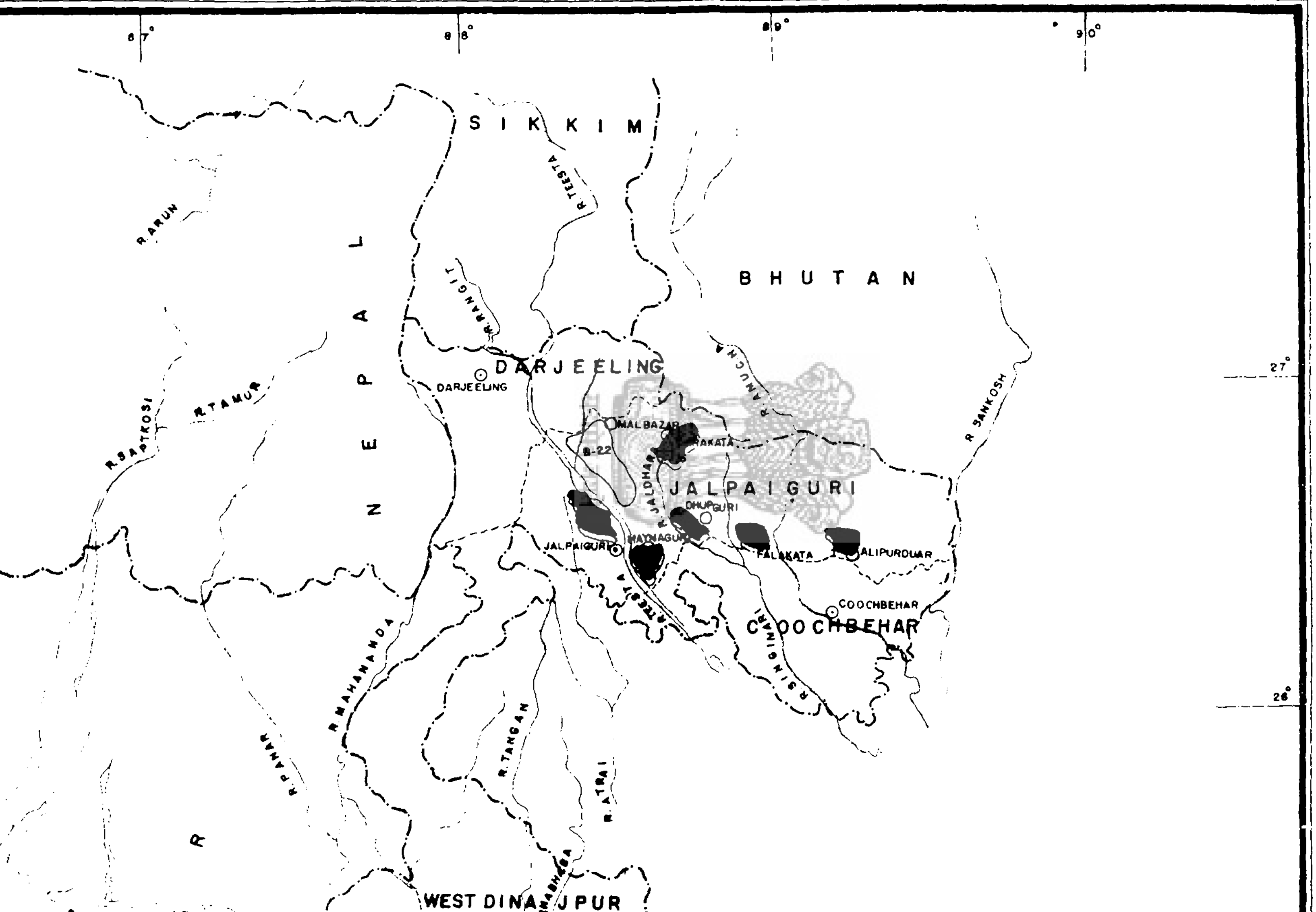
MAP II


87°
88°
89°
90°
27°
26°
SIKKIM
BHUTAN
NEPAL
DARJEELING
DARJEELING
JALPAIGURI
COOCHBEHAR
COOCHBEHAR
WEST DINAJPUR
R
R. TEESTA
R. RANGIT
R. ARUN
R. TAMUR
R. SAPTKOSI
R. ANUCHA
R. SANKOSH
R. JALDHAR
R. TEESTA
R. SINGIMARI
R. MAHANANDA
R. PANAR
R. TANGAN
R. ATRAI
MALBAZAR
RAKATA
B-22
DHUPGURI
MAYNAGURI
JALPAIGURI
FALAKATA
ALIPURDUAR